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ORIGINAL COMMUNICATIONS.

HOW SHALL WE TREAT OUR CASES OF PELVIC
INFLAMMATION?

BY

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THIS question will be answered differently according to the views we entertain of its pathology.

After all that has been written, and that has been demonstrated post mortem and at the operating table, there should to-day be little, if any, difference of opinion among us in regard to the pathology of pelvic inflammations. And yet a careful perusal of the proceedings of our societies will easily convince one that great confusion still exists in men's minds upon this subject. As long as this remains there can be no unanimity among us in regard to the treatment. If one man regards a case as pelvic cellulitis, and another believes it to be peritonitis, how can they be agreed about its treatment?

In presenting the subject to you on this occasion, I ask first that you will allow me to make a statement of pathological doctrines which I think cannot be controverted in the present state of our knowledge.

In a memoir written in 1862 Bernutz declared that pelvic exudations had for twenty years been the subject of passionate discussions, and that various names had been given them according to the importance attached by authors to one or other set of symptoms. They had been called "engorgements of the uterus," "partial chronic metritis," "ovaritis," and "peri-uterine phlegmons."

Under the influence of the teachings of Nonat they had then for ten years past been called "peri-uterine phlegmon" or "pelvic cellulitis."

Bernutz's memoir was written to show that the varied forms of pelvic disease with which gynecologists are so familiar to-day, and about which we are now in controversy, *are not inflammations of the pelvic cellular tissue at all, but are the results of a pelvic peritonitis.* The memoir, for completeness, scientific accuracy, and importance to gynecology, has no parallel, so far as I know, in the history of medicine. It is based upon the study of ninety-nine cases of non-obstetric pelvic peritonitis, with thirteen autopsies. The records of these cases are in every sense complete and perfect histories. They present the fullest and most minute description of the clinical features of the disease. They describe with the greatest precision the condition of the pelvic tissues after death. They demonstrate beyond cavil the existence of an inflammation of the pelvic peritoneum, pure and simple, sufficiently extensive to destroy life, and uncomplicated by a trace of cellulitis. The thirteen autopsies tell the whole history of non-obstetric pelvic inflammations. After careful study and recital of the symptoms and physical signs during life, physical exploration of the pelvis was made at death by the bimanual, and then the abdomen was opened. The exudation tumor was found not to involve the cellular tissue in any degree, but to consist of ovaries and tubes folded upon themselves, matted together by exudation, and adherent to the posterior surface of the broad ligament or of the uterus.

In some cases, it is stated, the endometrium was healthy; in others, that it was inflamed; in one it was covered with pus. The tubes were often adherent to the ovary, their fimbriated ends occluded and the fimbriæ destroyed.

In nine of the autopsies one or both of the tubes contained

pus; in two they contained tubercular matter; in one autopsy the peritonitis was due to cancer. In four cases the ovaries were healthy.

Finally, as a result of these autopsies, let it not be forgotten, the one constant feature is *diseased tubes*—salpingitis. It was then conclusively shown by Bernutz, in Paris at least, that pelvic peritonitis was a very common disease, and that it existed independently of, and unassociated with, cellulitis. The disease as we well know it to-day was therefore written out in all the fulness of accurate detail thirty years ago. But we utterly ignored it. Our leading men knew nothing but pelvic cellulitis. Our text books described only cellulitis, and if peritonitis was acknowledged at all it was as an addendum to cellulitis.

Emmet, in the last edition of his work on the “Diseases of Women,” published only six years ago, says: “I shall employ the term cellulitis as expressing the most common condition of pelvic inflammation in connection with the non-puerperal diseases of women. Pelvic peritonitis will not be treated of as a distinct lesion, but as an accident, rendering the case of cellulitis more grave in character from the complications.”

Until within a very few years Thomas and Matthews Duncan were the only writers of note who appreciated the value and the truth of Bernutz’s discoveries. Why we have so deliberately turned our faces away from the light I have not understood, unless because we have been influenced by the views of the obstetricians. A little more than six or seven years ago we began to be familiar with the results of Mr. Tait’s surgical work in the treatment of pelvic inflammations. Abdominal sections demonstrated two facts: first, that those cases which had been called chronic cellulitis, and treated as such, were not cellulitis, but were peritonitis; second, that these cases, after defying all other treatment for years, were cured promptly by removing diseased tubes. Mr. Tait had thoroughly studied the teachings of Bernutz, and upon his pathology had based the surgical treatment for this disease which is now so well known, and which rests upon as firm a basis as any other operation in the domain of surgery.

In 1886 Prof. Polk,¹ of New York, published a paper which was based upon the study of sixteen cases of pelvic inflammation known as "chronic cellulitis." Abdominal section was made in all these cases, and the lesions found were salpingitis, periovaritis, and pelvic peritonitis. "In two of the cases there was slight edematous swelling of the cellular tissue in the broad ligament just beneath the spot at which an inflamed tube had rested; in the remainder the most careful examination failed to detect the slightest induration or swelling in any part of the cellular tissue that lay about the uterus or between the peritoneal layers of the broad ligaments."

In these cases the bimanual exploration of the pelvic organs was employed before and after the operation. After removing the diseased appendages the swelling could not be found in a single case.

He also says that "in a large number of post-mortems made in the dead-house of Bellevue Hospital, it is noticed that, excepting those patients who have died of septicemia, it is the rarest thing to find pelvic cellulitis, unless the cellulitis be clearly secondary to a previous inflammation of the pelvic peritoneum."

A few months before these results were published, Dr. Coe's paper, "The Exaggerated Importance of Minor Pelvic Inflammations,"² appeared, in which is found the following statement: "Of half a dozen fatal cases of hysterotrachelorrhaphy and incision of the cervix, in which I have enjoyed the rare opportunity of studying carefully the sequence in every instance, the cause of death was acute diffuse peritonitis." He also declares, in speaking of the more chronic cases, in which circumscribed areas of inflammatory exudation were found, that "peritonitis is certainly the most prominent element in most of these cases, as far as the post-mortem appearances afford any light." And again: "By far the greatest number of these indurations are situated high up in the broad ligaments, and consist of cicatricial masses mostly confined to the peritoneum, of tubes or ovaries surrounded by old adhesions, or occasionally of an imprisoned knuckle of intestine.

¹ Med. Record, September 18th, 1886.

² New York Med. Jour., May 15th, 1886.

I confess that I have rarely (perhaps half a dozen times) found such thickenings in the cadaver which could be referred to a pure and straightforward cellulitis, and this, too, when I have recognized by the vaginal touch (before and after death) what seemed to be an induration, a distinct band, extending outward from a deep laceration of the cervix, or a condition of tension in or above one lateral cul-de-sac which did not exist on the opposite side."

More complete demonstration of the entire accuracy of Bernutz's utterances thirty years ago could not be given. Furthermore, nothing new has been added to his teachings. If he were standing here to-day he would claim, as he did then, that these cases, which constitute quite one-half of the work of the gynecologist, are cases of tubal disease and not of cellulitis. Bernutz fully admitted phlegmons of the broad ligaments as proven by numerous autopsies, and he referred to Marchal's (de Calvi) thesis. "Marchal's book is, however, really a work on puerperal abscesses." ¹ He claimed that the opinions of Grisolle, of Valleix and Gallard, all united yet independent testimony, together with his own studies, established beyond doubt the extreme rarity of non-puerperal pelvic cellulitis.

Mr. Tait ("Dis. of Women and Abdom. Surgery," p. 131) says: "If parametritis and pelvic cellulitis be relegated to their proper place, and they may be taken to mean the same thing, it is one of the rare conditions we have to deal with among the special ailments of women. . . . Before the light came which was shed upon these ailments by modern abdominal surgery, I believed, as others did and do still, that parametritis, or pelvic cellulitis, was a common disease; and in my writings up to 1878 it is evident I confused cases of damaged uterine appendages with pelvic cellulitis. The latter disease is rare and occurs in two forms, depending for their characters on the situation of the disease. If it exists on the inner half of the broad ligament, it is to be recognized as a mass lying close to the uterus and in front of it between the uterus and bladder, and into the bladder it generally bursts. If it exists in the outer half of the broad ligament, it is to be recognized as an ill-defined mass lying on the brim of the pelvis and fading

¹ "Parametritis and Perimetritis," Matthews Duncan.

off on that ridge. In this position it bursts over the brim of the pelvis and constitutes the familiar pelvic abscess whose sinuses go on for years. Suppurating hematoceles of the broad ligaments have similar endings. I treat all such cases by abdominal section and drainage, and the patients are cured in as many days as it takes them months to get well if treated in any other way."

Dr. Joseph Price says: "It should be strongly impressed upon the general surgeon and the general practitioner that operative gynecologists do not find pelvic cellulitis." The truth of these doctrines has now been attested by hundreds of autopsies and more than a thousand sections. Where, I ask, are the evidences of pelvic cellulitis? For the most part, outside of obstetric medicine—I say it with respect—they are to be found only in the imagination of the physician; they do not rest upon proof furnished in the dead-house, or upon the equally positive results of abdominal section.

This history of pelvic cellulitis has long ago been written. Gosselin, Gallard, Aran, and Nonat in France, West in England, and Virchow in Germany have fully described it. Its associations are with the puerperal state, or else with sepsis occurring after gynecological operations. It is an acute disease; it readily eventuates in suppuration, and therefore most of its literature has reference to intrapelvic abscesses. If at times it appears to be chronic, it is so because of its association with pelvic peritonitis, to the continuance of which it owes its chronicity. Recurring attacks of pelvic inflammation are not characteristic of, nor do they belong to, cellulitis. They especially mark the existence of pelvic peritonitis, and they mean *leaky tubes*. This was taught in the most emphatic way by Bernutz, and his teaching is verified by our everyday experience with pelvic peritonitis. If this chronic pelvic inflammation were cellulitis, we could offer no explanation of the exacerbations which are so characteristic of it.

The only exceptions to the above statements are found in some rare cases which seem to be independent of infection. Some of these are explained by a hematoma in the connective tissue of the broad ligaments, and some others originate in a perityphlitis which afterwards involves the parametrium (Fritsch). I have been interested in the study of this subject

for many years, and, with the exception of that obscure form of inflammation described by Freund as chronic atrophic parametritis "affecting chiefly the fascial and aponeurotic thickenings of the fatless connective tissue, and causing changes analogous to those in cirrhosis of the liver, kidney, and spleen" (Hart and Barbour), I know nothing of chronic pelvic cellulitis unless when it is associated with, and dependent upon, peritonitis.

While this controversy has waxed warm I have looked in vain for some anatomical proof of its existence from those who claim its frequent occurrence. The facts which I have laid before you are as well established as any within the domain of pathology, and I am sure they are as well known to you as they are to me. Why, then, is this discussion reopened here to-day? Because it is evident there is still great confusion in the medical mind in regard to the pathology, and because we are not agreed upon the treatment of this disease. The proceedings of societies show it, and the records of our hospitals show it.

In January, 1890, Dr. John Byrne read a paper before the New York Obstetrical Society on "A Case illustrating the Value of Therapeutic Measures in Chronic and Recurring Pelvic Cellulitis." The case was used as a text for entering a protest against the treatment of non-puerperal pelvic inflammation by laparotomy. The author declared "that recurring attacks of inflammation in these parts, where there was no positive evidence of pus cavities, should not be considered as warranting or justifying even explorative laparotomy." His argument is entitled to great consideration because of his high character, and because many of the best men in our profession preach and practise as he does. This was the case of a woman who had been married ten years. During the first and second years of married life she had miscarried twice, as a result of intentional interference. At the end of the third year after marriage she miscarried at eight and a half months from an accident. After delivery by forceps she had general peritonitis, from which she barely and very slowly recovered. Since then she has suffered inguinal pains and back-ache after exercise, and she has been twice pregnant again, but each time aborted. Early in February, 1889, as a result of

exposure to cold, she had an attack of metro-peritonitis, and the acute symptoms subsided under general treatment. She continued to suffer recurring pyrexial attacks with pelvic pains and irritable bladder. Excessive gastric irritation, night sweats, and pronounced emaciation were also present. About the end of March she consulted a prominent New York gynecologist, who recommended removal of the ovaries and tubes. Dr. Byrne saw her in the month of April, and regarded the case as general pelvic cellulitis and as unfit for laparotomy. His treatment was poultices, hot vaginal douches, tampons of iodine and glycerin, and rectal suppositories of iodoform and morphia, with iron and quinine internally. This treatment was continued from the 20th of April to the 25th of May, a little over four weeks, when the patient was cured. "Since then," Dr. Byrne states, "and up to the present time [January 21st, 1890], she has enjoyed perfect health, menstruates regularly, and has regained her original weight."

The lesson which the writer thinks is to be derived from this case is that "a due regard for a woman's prospective comfort and social happiness demands that in all such cases a persistent trial of every rational therapeutic measure shall have been tested before opening her abdomen and removing the ovaries and tubes." Moreover, this lesson is offered the Society "with the hope that its discussion may result in a clearer conception of important pathological landmarks, in danger, I fear, of being obliterated, and the adoption of some fixed principles of treatment, of which removal of the uterine appendages may be resorted to and justified as a *dernier ressort* only."

In carefully analyzing this case it is claimed that a woman, who presents a clear history of diseased sexual organs for a period of ten years, is restored to perfect health in about five weeks by means of non-surgical therapeutic measures. The term general pelvic cellulitis is used by the writer to describe a disease which was evidently a pelvic peritonitis, dependent upon tubal inflammation, and induced by exposure. His conclusion that the woman was restored to perfect health was a hasty one. The influence exerted by such treatment is a lesson we learned long since. Our hope that the benefits derived from it were lasting has often been disappointed.

The usual history of such cases is one of relapses. To make clear this point I ask you to accompany me in the following histories. In May last two such cases came before me.

One of these, a woman married five years, had previously been under my care, during the first year of her marriage, for recurring attacks of pelvic peritonitis which originated from an abortion. She was treated as Dr. Byrne's case was, and thought her health was entirely restored. About two years ago, however, she began to suffer attacks of pain under and outside the right breast. These attacks gradually increased in frequency and severity, and her health had been so impaired in consequence that, during the year preceding her coming to me in May last, she had lost thirty-five pounds in weight. She had received treatment from several physicians, and had been in St. Luke's Hospital, St. Louis, under the care of a gentleman of high standing as a physician and surgeon. Menstruation was regular and was attended with moderate pain only for the first six hours. She declared there was nothing left of her old pelvic complaint. Finding nothing in the thorax to account for her pain, which was almost constant, and the functions of the liver and other abdominal organs being undisturbed, my attention was turned to the pelvis. High up on the right side there was one of those "circumscribed indurations" and areas of tenderness on pressure which formed the basis of Coe's paper on "Minor Pelvic Inflammations." This patient came to me, bringing a basket of champagne, a bottle of which she had for some time been drinking at bedtime, in preference to opiates, to obtain a short respite from pain. Explaining my opinion that her thoracic pains were due to remnants of the old tubal disease for which I had treated her five years before, I offered, as the only intelligent treatment at my command, an abdominal section, stating that after opening the abdomen I would remove the appendages, only upon the condition that they were found sufficiently diseased to account for her sufferings. She willingly agreed to this, and the section was made. The appendages on the left side were bound by firm adhesions, but were apparently healthy. They were liberated, but not removed. On the right side there was a pus tube the size of the thumb. Its fimbriae were destroyed; its end was club-shaped. The ovary was increased

in size and consisted chiefly of large cysts. Both tube and ovary were deeply embedded in adhesions, and their removal was difficult. In this case the products of inflammation had been lying dormant for nearly five years, and for quite four years had caused no pelvic symptoms. As a result of the operation the patient is reported by her husband and physician to have regained twenty pounds in weight, to have been relieved of the thoracic pains, but to complain at times of the left ovary, and altogether to be much benefited.

The second case was a very healthy-looking woman, 26 years old, who had been married ten years. Soon after marriage she became pregnant, and miscarried at seven months, during an attack of bilious fever which lasted ten days. She again became pregnant, and miscarried in 1883 at seven months, during an attack of inflammatory rheumatism involving the hand, wrist, and elbow. She had after this a well-marked history of pelvic inflammation, from which she thought she had entirely recovered, as there had been no reason to suspect pelvic disease from that time. In May last she consulted me for relief of an almost constant burning pain in the left anterior wall of the vagina. Her general health was excellent and she was in good flesh. Menstruation was normal in every respect. The uterus was retroverted and fixed, but otherwise healthy. To the left and behind it, and quite high up, there was easily made out a small, distinctly circumscribed tumor, very slightly tender on pressure. I expressed the opinion that this was a product of the pelvic peritonitis which she had after miscarriage seven years ago; that it was the cause of her suffering; that no local treatment would give her relief short of removal of the appendages. But I strongly advised against this operation, on the ground that it was hazardous and because her general health was too good to justify so serious a procedure. I encouraged her to put up with the pain, as she had done for several years, and to let doctors and medicine alone. She insisted, however, on something being done for her relief; that with such a pain life was not worth living. After several weeks of the usual routine of hot water, iodine and glycerin, etc., without benefit, she and her husband insisted on the operation. The appendages on the right side were embedded in old adhesions. They were carefully libe-

rated, and, being found comparatively healthy, were not removed. On the left side there was a pus tube the size of the little finger. The corresponding ovary was entirely destroyed, being in a state of calcareous degeneration. Both it and the tube were deeply embedded in adhesions and were removed with extreme difficulty. Here were the products of inflammation walled in by lymph for seven years, not yet disturbing the general health, but causing almost constant pain in the vagina. This woman's troubles vanished after the operation. She is now in good health.

To the above cases of my own I now add the following, which I have taken from Mr. Tait's work on "Diseases of Women and Abdominal Surgery": "At the Société Anatomique, January 16th, 1880, a case of pyo-salpinx was narrated from Dr. Bernutz's service in La Charité. The patient was aged 29, and was admitted with severe symptoms pointing to pelvic inflammation and subsequently peritonitis. She died four days after admission, and on a post-mortem examination suppurative peritonitis was found to have spread up from the pelvis from the rupture of a tubal abscess. The autopsy revealed all the evidences of pelvic peritonitis with tubal disease. The internal halves of the tubes were healthy. The outer halves presented three or four dilatations, the largest being situated at the outer extremity, being formed by the occlusion of the pavilion, so that there was no opening into the tube, which was distended with pus. The pus tube on left side communicated with a cavity in the adhering ovary. Upon the posterior surface of this ovary was found a small rupture through which the contents had been extravasated into the peritoneum. Bernutz remarked that in all probability the suppuration of the tubes and left ovary was of ancient date, and that the fatal peritonitis was undoubtedly due to the perforation of the abscess into the peritoneum."

One important lesson made emphatic by these cases, and already well known to those who have studied the subject, is that it is often impossible to diagnose pus tubes. Frequently the positive evidence of pus cavities, which Dr. Byrne insists upon, cannot be obtained except by an abdominal section. From the original memoir written by Bernutz and Goupil in 1862 is this remarkable utterance: "The frequency, in my

experience, of tubal collections of pus in women who appear to be cured of attacks of orchitis, and who have afterwards succumbed, some from intercurrent disease, others from general peritonitis—the result, perhaps, of cauterization, or catheterism, or simple examination, or of menstruation—this frequency, I say, makes it necessary to reckon on such a palpable contingency after any attack of pelvic peritonitis. The obscurity of the symptoms of these purulent collections, the absence of any decided symptom in the great majority of the cases, keeps one in dread of a relapse of the orchitis which is so liable to recur, and which, when the abscess is in the Fallopian tube, may end in fatal peritonitis.” Thus wrote one who was not advocating surgical treatment, but simply stating the results of his observation, which many of us to-day can corroborate. My own observation of many cases, for periods of ten and twelve and fifteen years, is that after one attack of pelvic peritonitis relapses are the rule. The patient recovering from a first attack goes along, with care, very well for a time; but after some unusual fatigue or exposure near the period of menstruation, she has a return of inflammation from which she may die, or else partially recover and lead the life of an invalid.

And this is the experience of women in the better walks of life, who are able to take tolerable care of themselves and who are not exposed to hardship or compelled to labor. The future history of Dr. Byrne's case will in all probability confirm these observations. His patient has recovered, but she is probably not cured. He has come into court with insufficient evidence, and his case, in my opinion, is by no means proven. This doctrine of chronic recurring pelvic cellulitis, which I have declared to be erroneous, has long exerted a pernicious influence in the practice of gynecology; and the treatment which is based upon it has been carried to an extent which does not reflect credit upon an intelligent and learned profession.

A few weeks since there came under my observation a patient with prolapsed appendages fixed by adhesions in Douglas' pouch, who had, for a period of four full months, been treated in a celebrated sanitarium by rest in bed, the hot-water douche at a temperature of 115° F. for fifteen minutes three times a day, by applications of iodine and glycerin, and by faradic and

galvanic electricity—all this, and, as might have been predicted, with negative results. I ask the question, Should it take four months of such treatment to arrive at a conclusion in cases like this ?

Another illustration: Upon examining the report of the Woman's Hospital, for the year 1890, of one of our largest metropolitan cities and centres of medical education, I find in the tabulated statement of cases twenty of "pelvic cellulitis." Is it a matter of wonderment that the attending physician, who came on duty in this hospital in July last, found, out of a possible total of seventy patients, thirty who for weeks and months had lain there, receiving a treatment of hot douches and iodine, curetting and electricity, not only without benefit, but in many cases with positive injury? Most of these cases would not admit of further delay; they were urgent cases, not of cellulitis, but of pelvic peritonitis with pus tubes and ovarian abscesses. After consultation with high authority unconnected with the staff of the hospital—the other attendants being absent on vacation—they were all subjected to operation by abdominal section, with satisfactory results in every case. This is an extraordinary statement, but I make it upon authority which I know to be absolutely correct and truthful. These are grievous sins of omission, and this failure to do the right thing, this hesitancy to remove irretrievably damaged organs, arises from the belief that the disease is cellulitis and that it can be cured by rest and iodine and electricity. I maintain that the time has come when the term cellulitis should be abandoned in connection with non-obstetric pelvic inflammations. It is a misnomer. No such pathological condition is known to exist, unless to a *minor* degree as dependent upon a *major* peritonitis, and its existence then, even if a matter of importance, is impossible of diagnosis.

Having now presented pathological doctrines which I believe cannot be controverted, I ask to make some remarks upon the methods of treatment commonly used, and their value. Let it be remembered that in the class of cases we are now considering there is tubal disease in its various forms, with or without ovaritis and pelvic peritonitis. As a result of peritonitis there are exudations of lymph gluing together adjacent structures, thick deposits of false membrane, and in many

cases effusion of serum in the interspaces between adhering organs. These inflammatory swellings are very conspicuous on using the bimanual. The non-surgical treatment so long in vogue will often bring about important changes in the diseased structures. The essential features of this treatment are rest, counter-irritation to the pelvic organs, hot sitz baths, with attention to the digestive organs, and especially to the functions of the bowels. *Under this treatment large intra-peritoneal exudations are absorbed, and even some tubal and ovarian inflammations entirely disappear, and recovery seems complete.* This, however, is by no means the rule. It is the exception. Complete restoration to health will depend on the condition of the tubes and ovaries. What this condition is, after an attack of inflammation, we are usually unable to discover. If the tubes have been secreting pus, or, if with closed ends, blood or serum is collected in them, this will almost surely give trouble. It may be years, but the trouble will come. Ovarian inflammation arrived at the stage of cystic degeneration is progressive, causing constant pelvic pain, monthly hemorrhages, nervous and digestive disorders. The benefits of non-surgical measures are very limited here. Even when active inflammation entirely subsides under this treatment, and the diseased tube becomes walled in by lymph, and the pelvic symptoms disappear, and the patient's health seems entirely restored, it is only a question of time when new symptoms will arise. The patient comes back to us years afterward suffering, with signs of a foreign body in the pelvis surrounded by cicatricial tissue, as in the cases I have reported; or with a general peritonitis under circumstances which almost forbid an operation with any hope of success; or with the evidences of tubercular disease; or, it may be, with a tubal pregnancy.

I wish to emphasize the fact that the non-surgical treatment in most of the cases simply removes the products of peritoneal inflammation. It cannot accomplish much for the diseased tube and ovary beyond the exercise of that beneficial influence which is exerted by absolute rest on all inflammations. That the treatment of pus collections in the pelvis requires surgical treatment goes without saying. In the majority even of the mild cases where there is no question of pus,

where the appendages have simply been inflamed and have become dislocated and adherent in an abnormal position, after the most prolonged and systematic and thorough administration of non-surgical treatment, the patients are not cured. Though improved in many ways, they are still invalids. The disease is not entirely removed. It continues to harass the patient and the physician.

In such cases life is not in danger, but the question usually presented is whether the patient shall live a life of inactivity, unfitted for most of her duties by nearly constant suffering of greater or less degree, or shall she be subjected to a surgical operation? It is for her to elect. Non-surgical treatment will not cure her. I do not say that these cases must all be subjected to surgical treatment, but I do say that non-surgical treatment does not cure them. In a class of cases not yet spoken of, non-surgical treatment has but a short and very limited application. I refer to those with high grade of peritoneal inflammation, with large masses in the pelvis, in which the diagnosis of extra-uterine pregnancy with partial rupture of the tube is in question. I refer also to severe attacks of recurring peritonitis, in which there are surely leaky tubes. In these classes we wait for a sign of rupture. We resort to brisk catharsis with salines. If marked improvement does not quickly follow, a continuance of non-surgical treatment is fraught with great danger.

ELECTRICITY.

A few words concerning electricity. In the discussion of Dr. Byrne's case before the New York Obstetrical Society, Dr. Goelet remarked that "ordinary cases of chronic cellulitis should first be treated by positive galvanism in the vagina, and later by the negative pole, and they would get well quicker than by the plan adopted by Dr. Byrne."

There is evidently great confusion and misunderstanding here. I have given this subject careful attention; have closely studied Apostoli's writings, and have faithfully tried his methods with his own instruments for three years. The results which I have obtained from electricity in the treatment

of pelvic inflammations are absolutely negative. I have ceased to expect any good from it.

ASPIRATION.

It has been proposed by one of our most respected Fellows to abort this inflammation by aspiration of the cellular tissue in the roof of the vagina. I have not tried this method, but, I may ask, by what possible means could aspiration accomplish such a result in the disease which has been brought before you to-day? Even if it were a pelvic cellulitis, does aspiration abort cellulitis, or rob it of any of its horrors in any other portion of the body, dependent, as it is, upon a septic poison carried by the lymphatics? From the pathology of chronic pelvic inflammation, as we understand it to-day, it is evident that, as a rule, radical cure can only be reached by laparotomy. I refer to cases, not of hysteria, but those in which there are well-marked objective signs of diseased appendages.

It is freely and clearly admitted that some cases are absolutely cured by non-surgical treatment; and it is certainly not contended that every case not thus cured is to be subjected to abdominal section. In the milder forms the patient often lives in comparative comfort, and she wisely prefers even to suffer to a moderate degree rather than undergo operation. My rule of conduct is to give them, when possible, the full benefit of rest and counter-irritation, and baths and purgatives, and to improve the local and general condition as far as can be. Then, after the peritonitis is removed and the situation in the pelvis is cleared, a more intelligent opinion can be formed of the probabilities and possibilities of the case. In some cases this delay and this treatment are not admissible, and operation is imperative. The one feature which to my mind affords the strongest evidence in favor of operation is recurring attacks of peritonitis. These certainly mean serious disease of the tubes, which, if held in abeyance for a time, will surely give trouble in the future.

THE UTERO-VAGINAL ANGLE IN THE TREATMENT OF
LACERATIONS OF THE PERINEUM AND THE
PELVIC FLOOR.

BY

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(With eleven woodcuts.)

SINCE Roux, in 1832, succeeded in repairing a lacerated perineum, surgeons have devised a great number of operations for the cure of the laceration, each believing his particular method would be universally adopted, and each in turn being disappointed. The methods devised by Emmet, Thomas, Simon, Hegar, and Hildebrandt are more generally employed than any other, and, for some unexplained reason, they are all modifications of the "butterfly" denudation. Other methods might be deemed worthy of note, but lack of space prevents an enumeration of them.

Why have so many methods been devised? Why are we not satisfied with the method of Thomas, or Emmet, or Mundé, or Hanks, or Hegar? Because the true method has not as yet been demonstrated, and it is with the hope of throwing a little light on the subject that I bring forward what, in my opinion, is the correct method of operating for lacerated perineum. Before proceeding with the demonstration of the operation, however, I wish to call attention to five rules:

I. Every case of laceration of the pelvic floor or of the perineum is complicated with a retroverted uterus.

II. In every case of retroversion of the uterus there is prolapse of the uterus to a greater or less degree.

III. Whenever the lacerated pelvic floor or perineum is restored to its normal condition, the prolapse and retroversion can easily be cured.

IV. The only way in which the lacerated pelvic floor or perineum can be restored to its normal condition is by uniting the severed ends of the levator ani muscle.

V. The only way in which the severed ends of the levator ani can be united is by making a denudation, the edges of which shall correspond exactly with the edges of the tear.

Let us consider the application of these rules.

I. When the parts are in their normal condition, the crossing axes of the uterus and vagina form an angle of about 95° (see Fig. 1). When there is a tear of the pelvic floor or of the

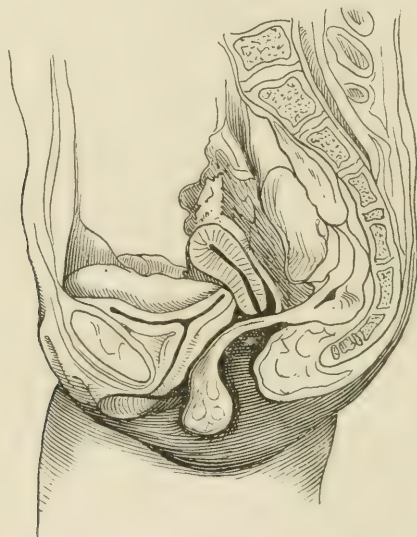


FIG. 1.

perineum, the rectum bulges into the vagina to a greater or less extent, forming a rectocele. In order that this bulging may take place, the recto-vaginal septum must be shortened to a certain extent, which shortening is brought about by the separation of the edges of the tear; and, as the upper portion descends to allow this separation, the vaginal attachment to the posterior lip of the cervix draws the cervix downward and forward; and, as the body of the uterus is not easily bent, the fundus must of necessity be carried backward, and we have then the loss of the utero-vaginal angle and the first degree of retroversion (see Fig. 2).

II. When the uterus has reached the first degree of retro-

version, there is, instead of the utero-vaginal angle, a straight utero-vaginal axis; and, as there is nothing to support the uterus, it naturally, of its own weight, descends into the vagina, and we have then the first stage of prolapse.

III. The first object of an operation on a lacerated perineum should be to restore the parts to their normal condition. When this has been accomplished, by bringing the separated edges of the tear together, the upper portion of the recto-vaginal septum can ascend, thus removing all strain from the

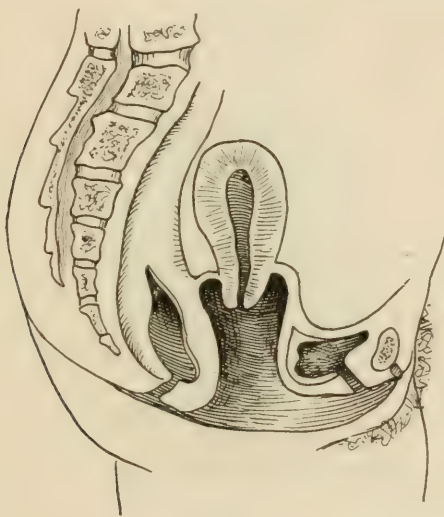


FIG. 2.

cervix, when the uterus can easily be restored to, and maintained in, its proper position.

IV. The anterior fibres of the levator ani muscle pass downward on either side, and are inserted into the sides of the rectum and vagina, assisting in the formation of the recto-vaginal septum. When the pelvic floor or the perineum is torn, the muscle is divided and the ends retract, in precisely the same manner as a rubber band, if placed moderately tight around a horizontal cylinder and cut across on the under side, will retract, and the severed ends hang loosely on either side. Now, unless the severed ends of the muscle are united, the parts cannot be restored to their normal condition.

V. The shape of the tear, when first made, is represented by two triangles placed base to base, one in the vagina, the other on the perineum. The base of the internal or vaginal triangle is at the fourchette, the apex at the beginning of the tear. The base of the external or perineal triangle is at the fourchette, the apex at the end of the tear (see Fig. 3). Unless the injury is repaired, the rectum will soon bulge into the weakened place, the edges will be separated, and the bottom of the tear brought to the surface, making what was

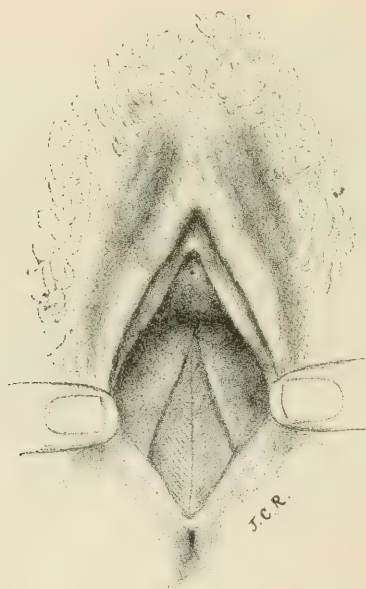


FIG. 3.

originally a deep triangular laceration a prominent convex surface; and, in order that the parts may be restored to their normal condition, a surface must be denuded, the edges of which shall correspond exactly with the edges of the tear, whether it be the pelvic floor, the perineum, or both, that are torn.

Having considered the application of the rules, we will now proceed with the demonstration of the operation, it being understood, without further words, that the woman has been properly prepared and that all antiseptic precautions have been observed.

Place the woman in the lithotomy position, with the knees widely separated and the labia separated by assistants. With the left index finger in the rectum and the right index finger in the vagina, examine the recto-vaginal septum for the edges of the tear, which can readily be felt, and can also be seen, as the borders of the rectocele correspond with the edges of the tear. Having satisfied yourself as to the extent of the tear, make with a scalpel an incision, beginning a little above the apex of the vaginal triangle, and running forward and outward

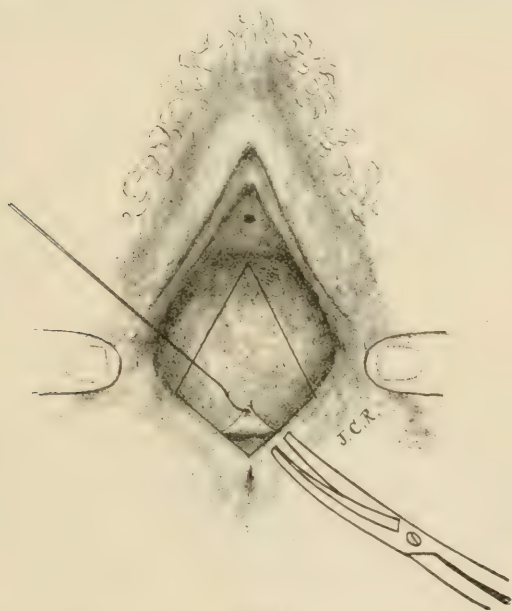


FIG. 4.

to a point on the labium corresponding to the angle of the base of the triangle, thence to a point a little below the apex of the perineal triangle. Make a similar incision on the opposite side, uniting the incisions at the apices of the triangles (see Fig. 4). Hook up with a tenaculum the apex of the perineal triangle, and with blunt-pointed scissors, curved on the flat, dissect off all the mucous membrane included in the incisions.

Having denuded the part, introduce a silkworm-gut suture (or silver wire, if the operator prefers) into the septum, under the skin, at the base of the two triangles, sweeping it all the way around, and causing it to emerge at a corresponding point

on the opposite side (see 1, Fig. 5), leaving the ends free to be tied later. Then introduce another at 2, another at 3, another at 4, another at 5, and another at 6—the sutures being numbered, that they may be tied as introduced. Then introduce a continuous catgut suture, starting at the apex of the vaginal triangle, and continuing until it reaches a point a little above 6. Tie the suture; then, beginning at 1, tie the interrupted sutures in the order in which they were introduced. When they are all tied and the ends cut off, there will remain a straight line perpendicularly, the rectocele will be entirely reduced, and the vagina restored to its former size

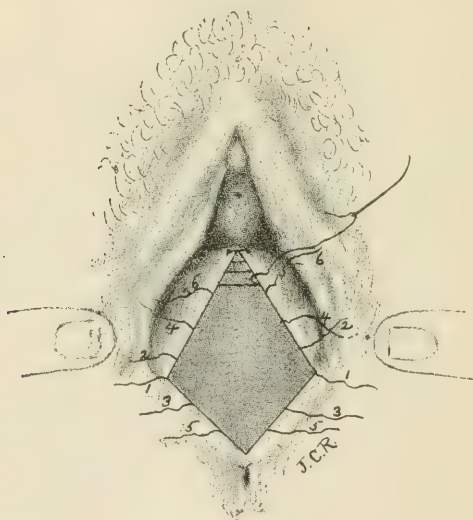


FIG. 5.

(see Fig. 6). The line of suture, seen in profile, will represent two sides of a triangle, showing that the parts are restored to their original condition, the perineum is perfect, and what was the widest part of the vulvar orifice has become the highest part of the perineum (see Fig. 7). Fig. 8 shows how the sutures should be introduced.

Should the laceration be complete, the incision should be made from a point a little above the apex of the vaginal triangle, thence to a point corresponding to the angle of the base, thence to a point a little below the dimple indicating the severed end of the sphincter ani, thence to a point a little

above the upper extremity of the rectal tear. A similar incision being made on the opposite side, the ends will unite at the apices of the vaginal and rectal triangles (see Fig. 9).

Having denuded the outlined surface in the same manner



FIG. 6.

as in an incomplete rupture, and the edges of the rectal tear having been trimmed, interrupted catgut sutures are introduced into the rectal tear, leaving the ends long until all are introduced (see Fig. 9); then tie from above down, leaving

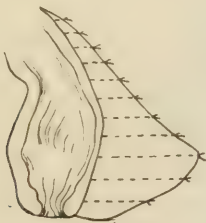


FIG. 7.

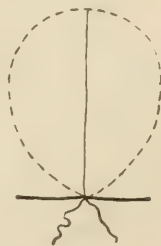


FIG. 8.

the knots in the rectum. When the sutures are all tied, the severed ends of the sphincter will be in apposition, the rectal tear will be a straight line, and the denuded surface will be represented by two triangles placed base to base, and the

sutures should be introduced and tied precisely as in an incomplete rupture (see Fig. 10).

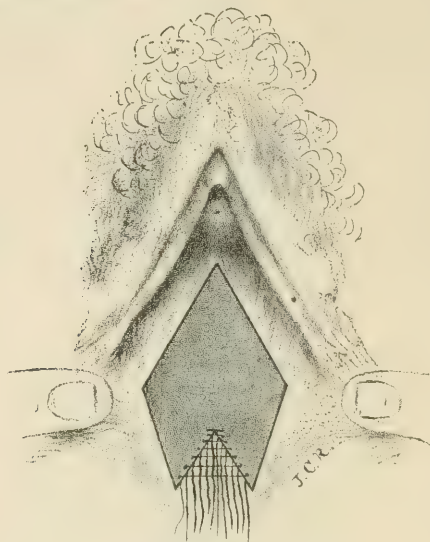


FIG. 9.

All that is now necessary to restore the uterus to its proper position is to place the woman in the knee-chest position, when



FIG. 10.

the uterus will, of its own weight, resume its normal position, and the utero-vaginal angle is restored (see Fig. 11).

Three or four days after the removal of the sutures a tampon should be introduced into the vagina against the anterior portion of the cervix, and pressed well back toward the sacrum. Another, and, if necessary, another, is then introduced to reinforce the first, great care being observed not to place a tampon posterior to the cervix. The tampon should be removed and another applied in from one to two days, this being continued for about two weeks, by which time the uterus will need no further support.

The question might be asked as to what particular advantage the triangular denudation possesses over the "butterfly"

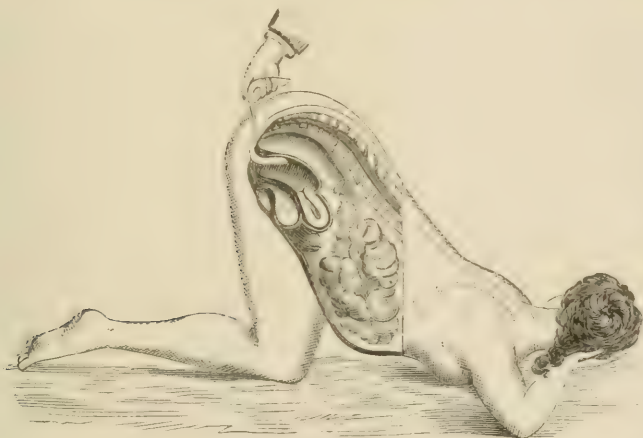


FIG. 11.

denudation. This can be answered by stating that it corresponds with the shape of the tear, while the "butterfly" denudation bears absolutely no relation to the form of the tear. If we have a lacerated wound of the thigh, with the edges separated and the tissues rolled out, do we cut off the everted tissue and pare the edges in the form of a butterfly? Why, then, should we do so on a lacerated perineum?

The angular denudation possesses another advantage, in that it goes above the beginning of the tear, while the "butterfly" denudation does not. Emmet says the denudation should "always extend to the crest of the rectocele," which is only half what it should do; for if the process of repair only reaches the crest of the rectocele, it still leaves a weakened

place above, through which the rectum will bulge, form a new rectocele, and the operation will be a failure. And it is for this reason that women operated on after the method of Emmet or Hegar have continued retroversion and prolapse, as the utero-vaginal angle is not restored and the uterus has no support. If we have an incised wound of the abdomen, with protrusion of the intestines, do we sew up the wound for two-thirds of its extent, leaving the other third so that the intestines may again roll out? Why, then, should we do so on a perineum or pelvic floor?

Prolapse and retroversion of the uterus can only be cured by the restoration of the parts to their normal condition and the restitution of the utero-vaginal angle; for without this the uterus has no support and will, of its own weight, fall from its proper position. With the parts once more in their normal condition, the prolapse and retroversion can easily be cured if treated without the aid of pessaries. A glance at Fig. 1 will show the reader that the first thing to do in replacing a retroverted uterus is to push the cervix well back toward the sacrum, when the body, which possesses considerable stiffness, will be thrown forward, as stated above. If the cervix be retained in this position by a suitably adjusted tampon, the posterior vaginal wall will soon be elongated sufficiently to remove all traction from the cervix, thereby allowing the uterus to maintain its proper relation with the vagina; and the only precaution to be observed while employing this treatment is to see that the woman keeps off her back. She may lie on either side or on her abdomen, but she should *not* lie on her back, for obvious reasons.

It might be argued that the tampon, placed anterior to the cervix, especially if the cervix be short, will not remain there, but fall back into the posterior cul-de-sac. This will not follow if the tampon be properly adjusted; for in many cases the shortening is more apparent than real, and the anterior vaginal wall will stretch sufficiently to allow of the maintenance of the tampon in the desired position.

Now, why cannot a retroversion pessary be used as well as a tampon? Because while the pessary is in place it constantly tends to draw the fundus backward by making pressure on the posterior junction of the uterus and vagina, and, while

it to a certain extent lifts up the fundus, allows the cervix to glide downward and forward; and soon, by the stretching of the posterior vaginal wall, the uterus lies with its fundus on the posterior end of the pessary, and the cervix under the anterior end, thus making the uterus and pessary nearly parallel, which condition of affairs retards and, in fact, almost renders impossible a cure. If a man attempts to stand a ladder against the side of a building, he fails, unless the foot of the ladder is held against the foundation wall; and the same rule applies to the cure of a retroverted uterus—unless the cervix be held well back toward the sacrum a certain length of time, the fundus will not come forward into its proper place.

Furthermore, unless the anterior end of the pessary is above the symphysis pubis—where it certainly should not be—the constant tendency of the pessary is to slip downward and forward; and, as the cervix is within the loop of the pessary, it is drawn forward, thus causing and maintaining a retroversion.

Even in cases where the uterus is bound down by adhesions, the action of the tampon in pressing the cervix back will overcome the opposition and after a time allow the fundus to come forward.

Authors usually speak of perineal tears in one chapter and retroversions in another, and perhaps this is well enough; but in the majority of cases they practically come under one treatment, for, as I stated in the beginning, whenever there is a perineal tear there is a dislocated uterus, and immediately after the repair of the one should follow the reduction of the other.

In cases where there is retroversion without laceration the same rule applies, for a careful examination will reveal a relaxed condition of the recto-vaginal septum, which can be cured by the use of proper medication, generally and locally, and by pressing the cervix backward so that the fundus may come forward.

The maintenance of the uterus in its proper position depends solely on the integrity of the utero-vaginal angle, and until this fact is understood and acted upon there will be, as heretofore, failure to bring about a cure of uterine dislocations; and when the loss of the angle is occasioned by the changes following a rupture of the perineum, it can only be

restored by making a denudation which shall conform to the shape of the original tear, so that, when the denuded surfaces are brought together, the parts may resume their normal relations.

EXTIRPATION OF SARCOMATOUS OVARIES IN A PSEUDO-HERMAPHRODITE.¹

BY

FLORIAN KRUG, M.D.,

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(With colored plate.)

THE rarity of the following case is my apology for reporting it.

The patient, a native of Poland, 19 years of age, was admitted to the German Hospital February 13th, 1889, and gave the following history:

Family history negative. As early as the tenth year of her age the patient had a copious growth of hair over the entire body, particularly on the face, and this latter to such an extent as to attract considerable attention and general comment. At the age of 16 the patient began to experience pains in the abdominal region at regular intervals of about four weeks; during that time there was also profuse epistaxis, but at no time any indication of a menstrual flow. A few months previous to her admission to the hospital the patient suffered continuous pain in the lower part of the abdomen, and at the same time became aware of the presence of a swelling, this compelling her to seek medical advice for the first time.

Her physician, after a hasty examination, sent her to the hospital with the diagnosis: *hematometra et hemato-colpos duplex*. On first seeing the patient in the gynecological ward I thought that, by mistake, a male had been placed there, so strikingly did she resemble one of the sterner sex; in fact, there was nothing suggestive of femininity about the patient

¹ Reported before the New York Academy of Medicine, Section on Obstetrics and Gynecology, October 23d, 1890.

except her long tresses. On closer examination and inquiry the following facts were revealed.

There was a strong growth of hair on the face, whiskers and moustache. The patient shaved herself daily. The entire body, particularly the anterior portion of the thorax, also the limbs, and the lower abdominal region, especially along the linea alba, were thickly covered with strong hair varying in length from one-half to one inch.¹ The mammary glands were poorly developed. The bones were massive, and in their form and development presented all the characteristics of the male type; this was particularly noticeable in the extremities and pelvic bones. The larynx was protuberant and as prominent as we observe it in the male.

The abdomen was enormously distended by a large, solid tumor which extended into the pelvis on both sides. Palpation determined the presence of a considerable quantity of ascitic fluid in the abdominal cavity.

At the first casual glance the external genitals strikingly resembled those of the male: there appeared to be a penis fully two inches in length, which was erectile on manipulation; immediately below, two folds closely resembling a longitudinally divided scrotum presented themselves (see Fig. 1). But the apparent penis was imperforate, and no testicles were contained within the integumental folds. Below this was detected a small entrance into a very narrow vagina, and on either side poorly developed labia. The urethra was situated directly below the penis-like clitoris (see Fig. 2). On introducing the finger into the very small vagina no rugæ could be detected. Immediately behind the symphysis pubis a very small portio vaginalis could be determined, the pinhole admitting a fine sound for a distance of about two inches. The tumor could readily be felt on both sides of, and posterior to, the small uterus, and extended as low down as the ischial spines, but could not be clearly differentiated from the body of the uterus.

A diagnosis of a probably malignant tumor of both ovaries in a pseudo-hermaphrodite was made.

Urinary examination revealed granular casts and considerable albumin. Physical examination of the chest revealed a

¹ In the plate the pubic region is shown as shaved for the operation.

systolic apical cardiac murmur and diffuse bronchitis. There was considerable edema of the legs, particularly of the right.

The general condition of the patient being a very poor one, operative interference, which alone could afford relief, was postponed, so that the patient might be brought into a suitable condition to withstand the effects of a serious surgical undertaking.

During this time endeavors were made in the direction of acquiring information relative to the sexual life of the patient, but she being of very limited intelligence, in fact mentally dull, all inquiry was of no avail.

In spite of every effort to improve her general condition, the patient grew worse daily; the abdominal tumor increased very rapidly in size; the pulse became more feeble, frequent, and intermittent; frequent respiration, persistent cough, occasional vomiting and diarrhea occasioned the patient considerable discomfort; the pains in the abdomen became so violent as to require the frequent administration of narcotics.

With such a condition of affairs I decided to operate without further delay. The patient was placed upon the operating table February 26th, 1889.

I debated for some time which anesthetic would be the more appropriate. Ether seemed to be contra-indicated owing to the renal affection and the marked bronchitis; again, I feared chloroform with such a marked cardiac weakness. Ether was finally decided upon as the lesser of two evils, but I regretted it later.

Operation.—An incision was made in the linea alba extending from the umbilicus to the symphysis pubis. On opening the peritoneal cavity a large quantity of ascitic fluid escaped. There were numerous adhesions between the tumors and the intestines, as well as with the parietes. These adhesions were divided with considerable difficulty, a number of ligatures being employed for that purpose. I now found that the lower portion of the tumor of the right ovary had unfolded the right broad ligament, and I was obliged to shell it out from the pelvis. I then made a short pedicle, tied and severed it close to the cornu of the uterus. The same condition existed on the left side, with the exception that the left tumor was smaller.

During the operation the hemorrhage was trifling ; a drainage tube was considered unnecessary, and after a careful toilet of the peritoneal cavity the abdomen was closed in the usual manner.

The patient rallied well from the surgical shock, but on the following day well-marked symptoms of a double pneumonia were developed.

At no time after the operation were there any symptoms indicative of any intraperitoneal trouble—no distention or tenderness of the abdomen ; there was free bowel evacuation ; only slight vomiting during the first hours after the operation, dependent upon the administration of the anesthetic.

The pneumonia, however, made rapid progress, the pulse became accelerated, respiration 56, marked cyanosis. Of the physicians who saw the case, all were of the opinion that the inflammatory condition of the lungs was directly due to the ether administered at the time of operation.

All therapeutic efforts proved fruitless ; the patient died ten days after operation.

I do not wish to introduce at length the subject of ether-pneumonia. Suffice it to say that I have met with five cases of pneumonia directly due to the administration of ether ; of these cases, two ended fatally. Hence, when operative cases present themselves in which there is marked bronchial affection, I prefer the administration of chloroform.

To be brief, I shall present only the more important facts revealed at the autopsy.

The abdominal incision was well healed and the adjacent tissues perfectly normal. No fluid was present in the peritoneal cavity. The parietal and visceral peritoneum was smooth and glistening ; no trace of any fibrinous exudate. The stumps on either side of the small uterus where the ligatures had been applied were perfectly normal. Both lungs were in a state of hepatization, with the exception of the apices. Considerable serum was present in the pleural cavity. Examination of the heart revealed the existence of a chronic endocarditis. The left kidney was enlarged, very anemic, though irregularly studded with hyperemic foci. The right kidney was also enlarged, but to a greater extent than the left, and was closely adherent and inseparable from a tumor, the size of a child's

head, in which it was embedded ; a portion of the pancreas and the large vessels were also involved in this metastatic growth.

Microscopical examination, for which I am indebted to Dr. Adler, of this city, revealed the following facts : The primary tumors of the ovaries were of the nature of mixed growths. While in some places the appearance presented was that of simple round-cell sarcoma with moderately large cells, very little intercellular tissue, and enormously enlarged capillaries, in other spots the sarcomatous tissue seemed confined mainly to the immediate neighborhood of blood vessels. Around the heavily hypertrophied coats of the dilated vessels was seen an almost circular patch of sarcomatous material ; these patches were surrounded and separated from similar patches by wide tracts of fibrous tissue, which latter frequently presented myxomatous, chondroid, and osteoid metamorphoses ; here and there patches of simple calcareous deposit or calcification were found. Accordingly the tumors had to be classed as sarcoma fibromatosum, with secondary myxomatous, chondroid, and osteoid changes. The metastatic growth presented the uniform appearance of simple soft round-cell sarcoma.

Had no operative interference been undertaken, death would have inevitably followed in a short time, as the metastatic tumor involved the kidney, pancreas, and abdominal aorta ; still it was hastened by the unfortunate occurrence of the complicating ether-pneumonia.

While hermaphroditism was formerly regarded as a mere freak of nature, to-day its etiology is more readily comprehended, for we know that at an early stage of fetal development the sexual organs are double in their preformations, and that the external organs of generation up to the fourth month of gestation present no apparent difference. It will be readily seen that all that is necessary to produce hermaphroditism is either the persistence of a part which should normally disappear, or the development of the genitals in the originally duplex character. Considering these circumstances, it is surprising that hermaphroditism does not occur more frequently.

Hermaphroditismus verus—the co-existence of functioning double sexual organs on one or both sides of the same

individual—has up to the present day not been established as proven; still there are quite a number of cases recorded in which there is a more or less pronounced degree of pseudo-hermaphroditism. In most cases the individual is possessed of internal male organs, whereas the external genitals and the general build and type are female in character.

Cases similar to the one described (properly termed pseudo-hermaphroditismus bilateralis externus femininus) are rare. The interesting question suggests itself: Is congenital anomaly of the sexual organs a predisposing factor towards the subsequent malignant degeneration of the same? Although this can be only a matter of conjecture, offering a wide field for speculation, it certainly appears to be a strong argument in favor of Colnheim's theory of the embryonic preformation of neoplasms.

TWO CASES OF TUBAL PREGNANCY, WITH REMARKS ON ECTOPIC GESTATION.¹

BY

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ON June 23d, 1890, a lady called at my office complaining of bloatedness, backache, and constipation. She gave her age as 27; was of American birth; had enjoyed perfect health up to her marriage four years ago; pregnant once, three years ago, labor at full term, normal. After confinement she had "ulceration of the womb," for which she was treated over a year in Milwaukee. It is an exacerbation of this womb trouble (she thinks) that now compels her to consult a physician. Upon examination I found the cervix neither lacerated nor ulcerated. In the region of the right ovary there was a painful swelling; a thorough examination, however, was impossible, on account of the tenseness of the abdominal walls. I told the patient that part of her complaint was no doubt due to con-

¹ Read before the Gynecological Society of Chicago, September 26th, 1890..

stipation, and that I would first try to relieve this and pay more attention to the womb later; I prescribed accordingly. About a week later, on the 30th of June, she again called at the office on account of constipation and intense bearing-down pains. I again examined and found the uterus decidedly larger than normal, the cervix peculiarly soft and doughy; the swelling on the right side of the womb seemed also somewhat easier to be felt. I told the patient I thought she was pregnant, and the bearing-down pains might indicate a miscarriage. She repudiated the idea, as she noticed no subjective symptoms of pregnancy, and as she had always been regular with her periods. She had menstruated last on the 7th of June, and expected surely to menstruate again on the 7th of July.

On July 3d I was called to the patient's house. She suffered excruciating pains, beginning in the lower part of the abdomen and radiating down the thighs; the pains were steady and not like the contractions of labor. Enemata opened the bowels, but did not remove the pains, which were only controlled by morphia. There was no nausea, no fever; appetite wonderfully good. In this way she passed a miserable time up to the 7th of July, the date of the next expected menstrual period. For the first time in three years the menstrual flow failed to appear. On the 12th, however, there was a show, and on the 13th she flowed quite freely. Meanwhile I had made up my mind that she was undoubtedly pregnant; and in order to satisfy myself as to what had become of the swelling on the right side, I examined on the 14th. There was no doubt that it had decidedly increased and had pushed the uterus over to the left and somewhat forward. It was exceedingly painful. To all appearances I had to deal with a case of extra-uterine pregnancy. I thus informed the husband, and we decided to call Dr. Jaggard in consultation.

On the 18th we examined the patient under chloroform, and found the uterus enlarged, especially so in its antero-posterior diameter, pushed forward and somewhat to the left. The cervix had the soft, doughy touch characteristic of pregnancy. To the right of the uterus, in a somewhat downward and backward direction, an elastic tumor of the size of a child's fist was felt. Between the uterus and tumor there was room

enough to put in a finger. Dr. Jaggard confirmed my diagnosis and also concurred with me in recommending immediate operation. This I did at the Michael Reese Hospital, Dr. Jaggard being present, on the 25th of July.

After opening the abdomen the bowels appeared slightly stained with bloody serum. Pushing these back, the whole situation could be taken in at a glance. Having introduced a colpeurynter into the rectum (as I am in the habit of doing, in order to lift up smaller tumors situated deep down in the pelvis), I at once reached the tumor. There was, to the left, the uterus, twice its normal size and very turgescient. The left tube, very much hypertrophied, as thick as the index finger, exhibited large veins. The right tube was still larger; its middle part especially showed an immense hypertrophy of its muscular elements, which spread like a fan over a tumor. The latter was of the size of a child's fist; it was glued by soft attachments to the uterus, the rectum, small intestines, cecum, and right side of pelvis. These adhesions were so loose that they easily broke down under the finger. Very little hemorrhage followed. After thus freeing the bulk of the tumor a pedicle was easily formed. I first ligated the uterine end of the tube, then I secured, by three linked ligatures, the fimbriated end and part of the broad ligament, including also the ovary. After removing the tumor there was an annoying oozing from a separated adhesion to the rectum, so much so that I decided to use a tobacco-bag tampon with iodoform gauze, after Mikulicz. The patient rallied very readily from the operation. There was considerable bloody discharge through the tampon during the first two days. The tampon was removed on the sixth day. For a number of days the temperature rose to 101° in the evening, which elevation was due to the iodoform, as was clearly demonstrated by the prompt return of normal temperature as soon as we began using oxide of zinc and later on balsam of Peru. There is still (on October 26th) a small fistula left, at the bottom of which I think a ligature keeps up a little discharge; ¹ otherwise the patient is well. She began menstruating, the first time after the operation, on September 18th.

Examination of the specimen showed that it was a case of

¹ November 11th, ligature extracted through fistula.

tubal pregnancy. The ovisac proper was situated in the middle of the tube, while the upper wall of the tube—*i.e.*, the part next to the anterior abdominal wall—showed immense hypertrophy of its muscular fibres (they were as large as bundles of a strong biceps). The opposite side of the tube was thinned out so much that it seemed as though the ovum was ready to break through, out of the tube, into the cul-de-sac of Douglas. The amnion was intact; it contained about an ounce of fluid, and the fetus was well differentiated and apparently about five weeks old. The ovary, which was removed together with the tubes, contained a cyst of the size of a small apple, being filled with a thin, chocolate-colored fluid.

Shortly after the preceding case had left the hospital another one was brought in, of which the house physician, Dr. M. Goodkind, has furnished me with the following history: Patient *æt.* 40, menstruated at 14; menstruation every four weeks up to five years ago, when the flow became irregular, sometimes occurring twice a month; generally lasts seven days, without pain and of fair quantity. Patient menstruated last three months ago (May 20th). Married seventeen years; three confinements, all full term, normal labors; eldest child 13 years old, youngest 5. Six weeks ago (July 16th), while washing, she experienced sudden and excruciating pains in neighborhood of genitals, causing unconsciousness which persisted for an hour. When she emerged from this condition she described sensations of vertigo, tinnitus aurium, pain, dyspnea, and utter prostration, causing such intense distress that she became quite incapable of any exertion and took to bed. Accompanying these symptoms she had alternating chills and fever, anorexia, nausea, and vomiting. A week after she began to menstruate slightly, and has done so to date. These various symptoms caused a rapid deterioration in health, and on August 27th she entered M. R. Hospital.

Status presens: Patient of strong build but extremely anemic; has a haggard and careworn expression. She suffers with intense bearing-down pains. Abdomen presents a symmetrical enlargement extending from the symphysis to one inch below the umbilicus, of fairly hard, elastic consistence. No fetal sounds.

By bimanual exploration we found the cervix pushed up

behind the symphysis by a tumor, resembling a small head, descending down upon the floor of the pelvis. It was impossible to properly locate the fundus uteri, its outlines being lost in the tumor, which extended from the posterior cul-de-sac along the region of the left broad ligament to within an inch below the umbilicus. It seemed to fluctuate, and, in fact, to present all the symptoms of a hematocele. I inserted an aspirator needle, but did not get any fluid. The following days the patient had a little fever, the temperature ranging in the evening between 100° and 102° ; the pains were controlled by morphia, but the tumor seemed to rather increase, causing retention of the urine, necessitating frequent use of the catheter. I deemed it necessary to do something radical to relieve the patient, and decided upon laparotomy. Our junior gynecologist, Dr. Frankenthal, agreed with me in the diagnosis—hematocele, probably caused by the bursting of an ectopic ovisac. September 4th was set for the operation.

After opening the abdomen the omentum and bowels appeared tinged with a peculiar yellowish-brown color, which revealed at once the bloody nature of the tumor. The tumor lay hidden under the small intestines, which were easily loosened with the finger and pushed back with a sponge, so that the apex of the mass was brought to view. After sponge-packing all around it, in order to protect the abdominal cavity against an overflow of possibly poisonous liquid, I first tried to aspirate; but, failing to get any fluid, I cut into it with a knife, making an incision wide enough to admit a half-hand. It contained black, semi-coagulated blood, which I scooped out with the hand. Thus far I thought I had to deal with a simple hematocele, and that the uterus lay pushed over to the left side. While manipulating to get the last coagulum out I loosened what I considered to be the womb; it proved to be a hard, solid coagulum which was hanging attached to a few loose shreds from the left horn of the uterus. The uterus proper I found in the median line and of normal size. After thoroughly cleansing the abdomen and the sac, I stitched the latter to the peritoneum and packed it with iodoform gauze. The patient rallied nicely from the operation. On the second day, however, the temperature went up to 103° ,

the abdomen became tympanitic, pulse weak, 130. Gases had failed to pass so far, in spite of laxatives, rectal tube, and turpentine enemata. We really thought the patient in great danger of beginning peritonitis, and in order to give her a chance we took her at 9 o'clock in the evening to the operating room, in order to relieve a possible retention of the wound secretions. While she was on the table, and before I had done any mischief to the wound, the first flatus passed *coram publico*. From that time on she began to feel better. She is still in our ward and has no fever; the wound discharges very little, and is becoming smaller from day to day.

In this case tubal pregnancy had occurred; the ovisac burst, first causing hemato-salpinx, then hematoma of the broad ligament, finally tearing and disintegrating the whole tube, the remnants of which were hanging down in shreds from the left cornu uteri. Later on there was renewed hemorrhage into the pouch of Douglas, causing hematocele. The sac which I stitched to the abdominal incision was organized blood, not peritoneum. The original ovisac, represented by the hard coagulum covered with villi, lay inside of the hematocele.

REMARKS.

1. *Diagnosis of Ectopic Pregnancy*.—It must be easy to make a correct diagnosis after the fourth month and before rupture of the sac, because we feel the living fetus or hear the heart sounds. Before the fourth month there might sometimes be a doubt, especially if the physician see the patient only once, or if he be unable to get an intelligent history. Besides the well-known and generally accepted signs of pregnancy (subjective and objective ones), I would derive the most valuable help, in making a diagnosis, from a close history. There will always be some *irregularity* in the menstrual flow—either cessation or too early recurrence of the periods—while formerly the menstruation has been regular. This irregularity resembles very closely the flow in a case of abortion. Another valuable symptom will be intense, excruciating bearing-down pains, mostly one-sided. These are not labor-like pains, but are more steady. They are no doubt caused by distention of the tube, due to the

rapid growth of the tumor. If we add to this the objective symptoms—the enlargement of the uterus, that characteristic doughy touch of the cervix, the presence of a gradually increasing tumor somewhere in the region of the broad ligament—then I think there should be sufficient reason to warrant the diagnosis of ectopic pregnancy. My first patient illustrates this symptomatology most conclusively. She is a woman who has always menstruated regularly to the day. Fourteen days after her last menstruation she begins to experience intense bearing-down pains, starting in the right hypogastric region; then, for the first time in three years, she goes over her time six days; then a free flow sets in for ten days, shreds of decidua pass. With all that there is no fever and no other cause to explain the pain. By digital exploration we find an enlarged uterus, giving that characteristic doughy feel of pregnancy, together with a steadily increasing tumor situated near the womb in the region of the broad ligament. There was, however, one classical symptom of pregnancy wanting, namely, the patient herself had not the slightest idea of being a grávida.

Now, how about the diagnosis of rupture of the ovisac? Those cases constitute two different classes, namely: (a) Rupture causes acute internal hemorrhage. Now, since there is hardly any other trouble but ectopic pregnancy causing internal hemorrhage, we may diagnose it at once if a patient shows the well-known symptoms of acute internal hemorrhage. (b) Rupture causes peritonitis, sepsis. If a patient had not been under observation before the accident, it might often be impossible to differentiate a ruptured ovisac from a ruptured pyo-salpinx, ovarian cyst, or the like.

2. *Anatomy*.—You know that Lawson Tait claims that the different varieties of ectopic pregnancy described in the text books are mere theoretical classifications, and that all cases are originally tubal, becoming ovarian, interstitial, or abdominal only after rupture of the tube and migration of the ovum to a new resting place. The simplicity of this theory recommends it. All recently published cases have been tubal pregnancies, as were the two cases related this evening. The first case also clearly demonstrates by the thinning out of the tube the possibility of an ovum slipping out of such an opening.

3. *Frequency*.—Late publications go to show that ectopic pregnancy occurs much more frequently than we have generally thought, a great number of cases of so-called *hematocele retro-uterina* and hematoma of the broad ligament being nothing but cases of ruptured ectopic pregnancy. Martin, Olshausen (of Berlin) have described many such cases. Sure enough, they never found the fetus, but were able in every instance to demonstrate the true nature of the disorder by the presence of decidua cells. Orthmann (who published Martin's cases) says that if in a hematocele we find an organized, well-defined coagulum, we may feel sure that this coagulum was originally an ovisac. Upon its microscopical examination we will find villi or decidua cells. Our second case wonderfully corroborates this statement. *In situ* yet of the torn and bursted left tube, and surrounded by the semi-coagulated blood accumulated in the hematocele sac, we found a coagulum of the size of an apple, covered with villi and enclosing the shrunken remnants of an otherwise well-differentiated fetus.

4. *Predisposition to Ectopic Pregnancy*.—It is worth while to repeat here that the first patient had been ailing for years (after her first confinement) with pains in the right ovarian region, and that an ovarian cyst of the size of a small apple, containing thin, chocolate-colored fluid, was removed together with the ovisac, right ovary and tube.

5. *Treatment*.—There is hardly any possible difference of opinion about what to do if a physician is called to treat a patient showing the symptoms of a bursted ectopic ovisac. We have, of course, to perform laparotomy at once—in the one case to stop an otherwise fatal hemorrhage; in the other case to remove decomposed matter which, if left in the abdominal cavity, will undoubtedly set up fatal peritonitis. What shall we do with a case where the sac is still intact? Let us first ask what will become of the patient if left to her fate. The sac might burst at any time, thus giving the patient a chance to die either from hemorrhage or from sepsis; or if she should escape both, and the fetus undergo mummification (lithopedion), she might, after years of suffering, see the fetus make its way out of the abdomen by perforating bladder, vagina, or rectum. Such being the case, I think the best way to deal with any case of extra-uterine pregnancy is to extirpate the

ovisac as soon as the diagnosis is made. For, even if we succeed in killing the fetus by electricity, aspiration, or injection of morphine, we are by no means sure that no sepsis or hemorrhage will follow, or that, years after, a lithopedion will not cause trouble necessitating an operation.

In an early month the operation will amount to nothing more than a laparotomy for a small ovarian tumor or salpingitis.

Thomas has warmly advocated the use of electricity, not only with a view to killing the fetus and waiting for its resorption, but also with a view to arresting placental circulation, thereby minimizing the danger from hemorrhage in a subsequent laparotomy. This would seem a very good plan if the action of electricity were sure; but since it is not, it seems more rational to operate at once, and not allow the placental circulation to increase by a delay due to futile efforts to arrest it. In my first case Dr. Jaggard and I discussed the propriety of a trial with electricity, but we decided to gain time over an increase of the placental circulation by immediate operation, and we really had no difficulty in controlling hemorrhage.

However, as gestation progresses the danger from hemorrhage increases. There being no contractile tissue to stop the gush of blood issuing from the placental insertion, it is of the greatest importance not to disturb the placenta. In such an advanced stage of ectopic gestation where rupture occurs less frequently, I would try electricity as the first preparatory step to a later laparotomy. In case pregnancy, for some reason or other, has been allowed to go on to near full term, the child has also some claim for consideration. Here, in order to save a viable child, we might put off laparotomy until labor begins, being ready, however, to operate at any time if symptoms of rupture of the sac should demand it. The safest way to treat the placenta in such a case seems to be not to attempt to detach it, but to stitch the sac to the abdominal wound, pack with iodoform gauze, and wait for spontaneous loosening of the after-birth.

In case of hematocele the proper treatment would be to first wait for natural resorption of the bloody effusion; second, to aspirate; third, to open through the pouch of Douglas, if the

tumor does not reach high enough to allow it to be sewed to the abdominal walls; fourth, laparatomy, if the tumor touches the anterior wall of the abdomen. Laparatomy seems the most rational procedure, because it allows us to properly locate the extent and surrounding parts of the hematocele. Whenever incision is resorted to, the opening should be made wide enough to easily remove all coagula.

A DEATH CAUSED BY A UTERINE DILATOR, WITH SOME
REMARKS AS TO THE PROPER METHOD OF
USING THE DILATOR

BY

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(With three woodcuts.)

THE uterine dilator has now grown to be an instrument of such common use that a word of caution as to possible dangers will not be unseasonable. About three years ago a physician who has since died, a man also of considerable local repute as a surgeon, called at my house and borrowed two dilators. He took one called Wilson's, a slight instrument with a very strong curve, tapering to a small point, and a larger Ellinger's dilator. About four days later he returned them, and called me in consultation to see the person upon whom he had operated. I found a slight young woman with an elevated temperature, and a small, quick pulse. She had an anxious expression, a dry tongue, and a fetid discharge was exuding from the vagina. Upon lifting her on to a table and exposing the cervix, I discovered a square, friable, rotten, black sponge, about two inches long, projecting from the os externum, through which I removed it in small pieces. It was the remains of a sponge tent made of the coarse material commonly used for washing out the mouths of horses.

About $1\frac{1}{2}$ cm. ($+\frac{1}{2}$ in.) above the os externum, in the posterior wall of the uterus, was a rent, 2 cm. in length, through which the finger passed into the peritoneal cavity, from which I had removed a part of the stinking sponge. The uterine body above was slightly enlarged from a pregnancy interrupted in the third month. The woman was clearly suffering from septic peritonitis consequent upon the perforation of the posterior wall of the cervix in attempting to introduce a sharp-pointed dilator into an anteflexed uterus (see Fig. 1). The small hole made by the point of the dilator had been more widely torn open by the larger instrument, and this was followed by the insertion of the sponge tents through the hole into the peritoneal cavity, thus insuring the infection of the abdominal cavity.

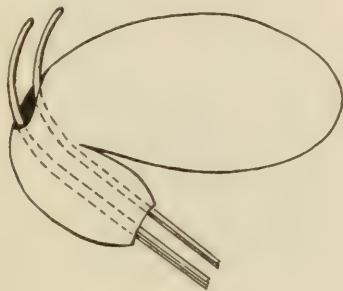


FIG. 1.

My urgent advice was immediate laparotomy, for the purpose of cleansing the peritoneal cavity, closing the rent, and draining the abdomen; but this the physician would not consent to, as he felt sure that the patient's condition could not be very serious, as she was suffering so little pain! Five days later, however, he called upon me in the evening, when I made a long trip to the house and operated near midnight. The patient's condition this time seemed hopeless, as she lay in the bed with a cylindrical abdomen, a flickering pulse, and an apathetic stare; but with a desire to give her the faintest glimmer of a chance for life by evacuating the pus and washing out the abdomen, I made hasty preparations and operated.

Under ether anesthesia, she was placed on my ovariectomy drainage pad on a table, and the abdomen was quickly opened. Fluid gushed from the opening, and about a litre (one quart) of

fetid, bloody serum mixed with flakes of lymph was ladled out with a small tin cup. There was an extensive peritonitis, involving all of the smaller intestines, which cohered, covered with flakes of lymph (Fig. 2). The rent in the uterus was found posteriorly in the cervix, low down near the pelvic floor. Hypodermics of brandy frequently given during the short operation whipped up the flagging heart, a drainage tube was inserted, and she was put back into a warm bed, and every effort made by hypodermics of strychnia, atropia, brandy, and digitalis, and stimulating enemata, to raise her out of the profoundly shocked state in which she died four hours later.

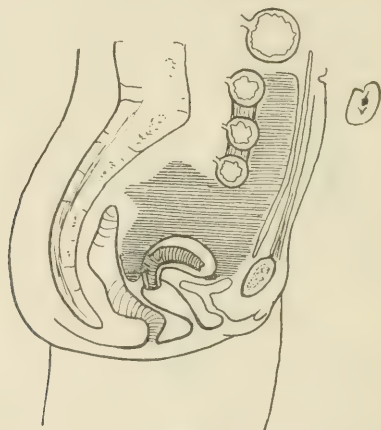


FIG. 2.

He who runs may read. The lesson taught by this awful tragedy is a plain one. The first objection is manifestly not against dilators in general, but against those dilators which end in a sharp point and are strongly curved in the dilating blades.

The liability to perforate an anteverted uterus with such an instrument is so manifest that I cannot help thinking that this accident has occurred more than once.

A further objection is against the manner of inserting the dilator—*force should never be employed*. The practice of grasping the dilator in the full hand and forcibly punching or boring it up into the uterus, and trusting that it will find the uterine canal to be the direction of least resistance, is altogether reprehensible.

The proper way to introduce the dilator is to hold it like a pen, delicately poised in mobile equilibrium between thumb and index and second fingers; thus held, it should with gentleness be persuaded to enter the canal of the uterus, whose direction has been determined, guided onward past the internal os, and then used as a dilator.

Another point is of great importance, correcting a common error. A frequent method of dilating is by screwing together the handles of the dilator, or by means of a ratchet attachment on the handle, never relaxing, but gradually forcing the handles together until the desired degree of dilatation is obtained. When this manœuvre is carried far enough to admit a small index finger (circumference 5 cm., or 2 in.) into the uterine cavity in the non-pregnant state, a careful examination

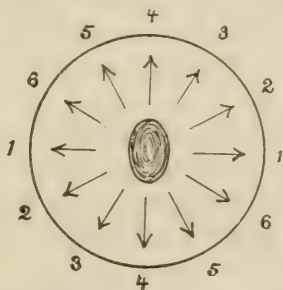


FIG. 3.—The dilatation is from the centre outward, at first in the directions 1-1; then allowing the instrument to close, it is opened in the direction 2-2, then 3-3, 4-4, 5-5, 6-6, and back again to 1-1, and so on until it is completed.

will almost always reveal a long laceration within the cervical canal, thus split on one or both sides, and occasionally throughout the whole length and thickness of the canal. This splitting of the cervix may sometimes be found when there is no evidence of any tear on the vaginal surface.

It is also well known that serious deep lacerations of the vaginal cervix are often thus brought about. A friend saw a typical vegetating cancer develop on such a lacerated cervix in a woman who had never been pregnant.

Instruments with ratchets and screw devices are on this account to be condemned.

The best dilators are simply constructed with a spring between the arms, closing the blades as soon as the dilating pressure ceases.

With such an instrument in my hand, I carefully insert it and proceed for a moment to gently dilate the canal in one direction, then, relaxing the pressure, the blades close and the dilator is rotated a little, again gently dilating another portion of the canal, and so on all around the circle and back to the first point, and around again, until the cervix, softened by these repeated gentle impacts from within on all sides, gradually and equably yields to the necessary extent without any laceration.

LACERATIONS OF THE CERVIX UTERI.¹

BY

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Two operative procedures, instituted by conscientious physicians for the relief of suffering women, have now been before the medical profession for some years. Both of these operations have been performed unnecessarily in so many cases that unmerited reproach has been showered upon them, and yet both have their sphere of usefulness which even their abuse cannot obliterate. The operations referred to are Battey's operation and that devised by Emmet for the relief of lacerations of the cervix uteri. That the latter operation is called for in some cases is conceded; that it is resorted to oftener than occasion demands it is the burden of this paper to demonstrate.

That Dr. Emmet claimed too much for his operation in the beginning, and thereby influenced professional practice, is evident in the light of experience, as the testimony of many gynecologists proves.

Emmet declared (second edition, 1880, page 483) that "its importance cannot be exaggerated, since one-half of the ailments among those who have borne children are to be attributed to lacerations of the cervix uteri." And in defining

¹ Read before the Washington Obstetrical and Gynecological Society, April 4th, 1890.

the class of cases demanding the operation, he was still more unfortunate. He wrote (page 467): "I would state that in every instance where the condition is evident, and where the woman suffers from neuralgia, I consider an operation necessary, notwithstanding the parts may have completely healed." This radical expression of opinion is not in accord with the judgment of other gynecologists of experience, as will be presently shown.

According to Dr. B. McE. Emmet, the following conditions are found to exist in different cases of laceration of the cervix, viz., cicatrization, eversion, erosion, cystic degeneration.

The causes which produce the various forms of laceration are predisposing and determining. The predisposing causes are those which weaken the part which gives way; the determining are those which make it yield.

While parturition is the principal cause of lacerations, others are also active. Among the latter have been mentioned the extrusion of tumors and the rapid divulsion of the cervix for the relief of dysmenorrhea due to cervical stenosis. The latter may also act as a predisposing cause by inducing pathological changes rendering laceration liable during parturition. In fact, anything which impairs the nutrition of the parts favors the production of the lesion in question. In this category may be included malignant disease, chronic inflammatory changes, varicose condition of vessels in the pelvic tissues. Other causes readily suggest themselves, such as abortions, forceps delivery before the os has dilated sufficiently, large size of child, malpresentations, version, etc.

One might infer from the perusal of Emmet's statement, quoted above, that a vast majority of the women who have borne children possess lacerated cervices. In my limited experience, it has been a matter of observation and surprise to find so large a proportion of women in the class mentioned who are free from lacerations, even to a minor degree.

If we now consider the symptoms which are said to follow the laceration at the time of its occurrence, we will find that hemorrhage is the one first noticed. This may be immediate and exhausting, calling for prompt action to secure its arrest; or secondary, when it is due to sloughing of tissue which

opens a blood vessel. Then follow weakness, dragging about the hips and loins, leucorrhea or sanguineous discharge. Still, most of these symptoms may be present when no laceration exists.

Notwithstanding the fact that the symptoms of laceration are so emphatically portrayed by many writers, it would seem that the diagnosis by the only reliable means—*i.e.*, digital examination—is not so easily established as we may be led to expect. The “mushy” condition of the cervix renders diagnosis difficult, unless, indeed, a portion of tissue is so far torn as to hang from the neck of the uterus. B. Emmet says: “It is occasionally possible, immediately after labor, to determine by the touch that a laceration has taken place” (“American System of Gynecology,” vol. ii., page 663). Now, if it be only “occasionally possible” to detect a laceration, we may be excused if we fail to diagnosticate that condition. In a case of transverse laceration of the cervix, reported by me to the Medical Society of the District of Columbia, and published in the Journal of the American Medical Association, I found it necessary to cut through the tissue intervening between the laceration and the normal os uteri, in order to permit the delivery of the child; and yet on examination a few days later it was almost impossible to find the point where the incision had been made.

The tear in the cervix may extend to the internal os uteri, but cases showing so severe a lesion must be very rare.

It will now be well to call attention to some other immediate results which are said to be due to the injury under consideration. It is rational to suppose that the lochial discharge, especially if it has become offensive from decomposition, in passing over the raw surfaces may produce serious constitutional disturbances and thus retard convalescence. And it may be admitted that absorption of these septic matters may set up inflammatory processes in the contiguous tissues. Cellulitis, fixation of the uterus, abscess of the ovary, phlegmasia dolens, and other affections are said to have resulted from cervical laceration. And yet all of these may arise independently of that cause; and when we remember that it is only “occasionally possible” to make out the tear, it looks like begging the question to insist upon the frequency of

these affections being dependent on a laceration. Subinvolution and superinvolution are said also to be due to the same cause.

Some of the remote effects of laceration will be mentioned in this place. Thus it is claimed that there is greater liability to abortion, because the cervix becomes "incapable of furnishing the proper support to a developing ovum" (B. Emmet). I am not able to appreciate the force of this reasoning. We know that during normal gestation the cervix softens as development proceeds. How, then, does it support the ovum to the extent indicated? If the tear involves the internal os, then the hypothesis might hold good; but it is not common to find the injury so extensive as that.

Then, again, it is said that sterility is a common result. Remembering that in many cases there is a free leucorrheal discharge present, may we not ask if the sterility is not more likely due to gonorrhea than to the cervical lesion?

Menorrhagia and metrorrhagia are credited to the same baneful influence; also neuralgia due to cicatricial tissue in the angle of the tear (B. Emmet). Other neuroses, such as facial neuralgia, a painful eye or affected sight, toothache, etc., are attributed to the injury. That I am not overstating the facts, permit me to make a short quotation from the most recent authority at my command, Dr. B. M. Emmet in the "American System of Gynecology." He says, the case having become chronic, "The most marked and characteristic set of symptoms, however, lies in the nervous system. That previously mentioned—namely, the change in the character of the blood—is one of the most prominent. The more or less constant pain in the back of the neck and at the base of the brain belongs to the same class of symptoms. The failure of memory either as to names or facts, and a feeling of dragging at the back of the eyes, are also common, and the variable or irritable disposition is one of many symptoms which we are almost sure to find present in a chronic case" (vol. ii., p. 655). How many of these symptoms are really due to getting about too soon after confinement, or to overwork while nursing an infant? And, parenthetically, we may say these same symptoms are present in broken-down men as well as in weak women. It has been too common of late years for enthusi-

asts in various fields of professional work to try to compel facts to fit into their theories. But sooner or later the idol-breaker passes along and demolishes the whole superstructure. In a paper read before the Section on Neurology, Academy of Medicine, New York, December 13th, 1889, by Dr. M. A. Starr (*Medical Record*, New York, January 4th, 1890, page 1), I have found much food for reflection, as bearing upon the question immediately under consideration, and regret that it is not practicable for me to do more than call attention to his remarks concerning "The Relation between Peripheral Irritation and Nervous Phenomena." But the emphatic manner in which he disposes of many delusions is worthy of note. And Reamy, of Cincinnati, has placed himself on record as follows (*Obstetrical Gazette*, Cincinnati, 1884, vol. vii., page 59): "I wish to embrace the present opportunity of entering my protest against the growing practice of subjecting young misses to digital and speculum examinations upon the most trivial complaint, under the ignorant impression that every ache in the lumbar or pelvic region means ovarian or uterine disease, or both, almost always signifying ulceration with displacement." Goodell speaks even more to the point when in the following language he insists that the symptoms presented by many women suffering from laceration of the cervix are misinterpreted. He says (*AMERICAN JOURNAL OF OBSTETRICS*, vol. xv., page 124): "From my observations I am disposed, indeed, to believe that the baneful influence on the system of hard and gristly cicatricial tissue left after some cervical tears has been overrated. I am willing to concede that sterility is sometimes owing to it, . . . I am also ready to grant that reflex pains and visceral disorders may come from it; but I am inclined to look upon these results as exceptional, and that a tear of the cervix is too often made the scapegoat of head-aches and nape-aches, of spine-aches and back-aches, and of various other nervous explosions which are due to nervous exhaustion or to nutritive changes in nerve centres, rather than to traumatic injury of their extremities. In other words, the constitutional phenomena are dependent usually on fine central lesions, and not on the reflex influence of coarse peripheral injuries." Other observers concur in the views so well expressed by Goodell.

Only one other effect of laceration of the cervix must be mentioned. I believe it was Breisky who claimed that epithelioma was likely to develop upon a lacerated cervix, and others have since adopted his suggestion as a fact. Realizing that any chronic malady affecting the uterus may, by prolonged irritation, render that organ more susceptible to the development of cancer, the question recurs, Does laceration favor the invasion of malignant disease in a ratio that greatly exceeds that of other maladies? In private practice I have had about fifty cases of uterine cancer, but I do not recall one in which the disease appeared to arise from a lacerated cervix. Of course my limited experience will not count for much against that of physicians in attendance in large hospitals, but it is sufficient to justify me in questioning the propriety of claiming prophylaxis for trachelorrhaphy, because disease may not have appeared in women who have been subjected to that operation; and, further, I believe harm is done by claiming immunity from cancerous disease for those operated on, as much as may be done by claiming that the disease is likely to appear unless the woman submits to the remedy of the knife. In other words, it is unjustifiable to give to a woman whose cervix has been torn the alternatives—trachelorrhaphy or cancer. This matter was very forcibly brought to my notice, somewhat more than a year ago, by a lady who came from a neighboring city. She was a handsome, large woman, about 30 years of age, the mother of five children, the last having been born one year previously. Her last labor was followed by some form of puerperal malady, from which convalescence had been very slow. For months she had been under the care of competent physicians, who finally told her she would have to submit to an operation. The dreadful word "cancer" was whispered, and the lady and her family were thrown into consternation by the suggestion. She did not wish to submit to an operation; she did not wish to accept the alternative—cancer. I had known this lady since her childhood, and recognized the fact that her nervous temperament had received a severe shock. On making an examination a small laceration was discovered on the left side of the cervix. The lesion was neither deep nor wide nor long. There was some slight prolapsus, but I was able to

satisfy myself that the lady's troubles were attributable to the laceration only to a very slight degree. Assuring her that she could be relieved without an operation, and by local and general treatment affording relief from the symptoms which had been present, her confidence was gained, buoyancy replaced despondency, and in a few months she was told that no further treatment was required. The change in this woman's condition was so great as to excite comment from all who knew her, and even from the physician who laid before her the alternatives mentioned above. But this branch of the subject must now be dismissed.

Before proceeding to mention a few cases which were treated by me without the performance of an operation, I desire to place before you certain facts concerning the results of the operation of trachelorrhaphy, especially with reference to the relief of the various neuroses which it is claimed are dependent on the tear in the cervix. A few citations will do this better than can be done in my own words.

Skene ("Diseases of Women," p. 258) speaks encouragingly, but not enthusiastically, of the results obtained. He says: "It may be claimed that successful restoration of the cervix will relieve the inflammatory troubles of the cervix, including the suffering from scar tissue in the great majority of the cases." You will see presently that Goodell is not in accord with Skene.

Dr. Skene, continuing, says: "Sterility due to the injury of the cervix and the consequent lesions is cured in many cases." In all seriousness I appeal to the profession to learn how many women have applied to gynecologists to have a lacerated cervix repaired for the cure of sterility. I never had a woman consult me for the relief of that condition, in order that she might be cured of sterility. On the contrary, many a woman has refused to be treated locally for the relief of the leucorrhea incident to a damaged cervix, when hopefully assured that she would be likely to conceive. I am not stating what *ought* to be, but the prosy fact that women will prefer sterility to maternity when they have once experienced the ills which sometimes follow parturition. Acquired sterility, or the means of accomplishing that result, are looked upon with more favor than the opposite state.

Now hear what Goodell has to say on the subject: "Of the beneficial results of the operation of trachelorrhaphy, I must candidly admit that I am not now so sanguine as at first." . . . "The broad rule may be laid down that when marked ectropion exists, associated with enlarged Nabothian glands, with leucorrhea and menorrhagia, the issue of the operation will be a happy one." . . . "When, however, I have operated on a tear without ectropion, or merely on account of cicatricial tissue in the angles of the fissure, I have met with some bitter disappointments. But I now know better when to operate; and this fact I have learned, that nervous exhaustion and spinal irritation will evoke symptoms which others, as well as myself, have referred to slight cervical tears, but which are in no wise dependent on these lesions."

Kaltenbach ("Cyclopedia Obst. and Gyn.," vol. vii., p. 151; Wm. Wood & Co., 1887) speaks in this wise: "In Germany the operation is regarded as a very decided addition to our therapeutic measures, but more is not expected from it than it is really able to effect.

"It is only in rare cases that the operation suffices to relieve all the symptoms. It is much more frequently a link in the chain of treatment, and in many cases appears entirely superfluous, because the shallow lesion constitutes an insignificant complication."

But you will say it is not fair to give only one side of the question. In answer I ask you to hear some statements made by Dr. B. M. Emmet in the work quoted. Goodell told us that we might expect happy issue when trachelorrhaphy was performed for the cystic form of the injury. Emmet says: "Cystic disease likewise is apt to recur, even for years after an apparently successful operation"; and further on he tells us that "in some cases this growth of glandular tissue, once begun, continues for an indefinite period, even after operation, and that we cannot get at the very bottom of the evil without removing the entire portion of the cervix which has been involved."

A case of cystic degeneration has been recently under my care, and I will incorporate it in this place, to show how much good may be done without a surgical operation. The lady is 33 years of age, the mother of one child who is now 9 years old.

She has a stellate laceration of the cervix, and occasionally (once in two or three years) comes to me for the relief of a leucorrhea. At the last occasion for treatment I found a few cysts, one as large as a good-sized pea, on the left side of the cervix. There was a slight catarrhal discharge proceeding from within the cervical canal. These cysts were punctured, their contents removed, and the cavity touched with Churchill's tincture of iodine, which was also applied to the entire cervix. Boracic acid, in fine powder, was then freely applied, and a dry cotton pledget was placed against the cervix. The application of iodine and boracic acid was made two or three times a week for about three weeks, when the surface of the laceration became, in appearance, like the surrounding tissue, the leucorrhea ceased, the patient no longer complained of symptoms referable to the uterus, and treatment was discontinued. You answer, the woman is not cured, and I reply that the benefit she derives is greater than I can assure her she will derive from an operation, having in view the remarks of Emmet above quoted.

Emmet also says that subinvolution is not cured by the operation, since it has become a separate individuality. Again he says: "Satisfactory as the operation generally is, we must guard against deceiving ourselves or our patient with undue hope. Some of her sensations and pains will disappear slowly at best; the nervous symptoms will yield only as her strength returns."

If the operative treatment, then, cannot hold out more certain encouragement than above set forth, what is to be done in lieu thereof? This must be briefly answered.

If the laceration is discovered at the time of labor, hot anti-septic injections should be used for the double purpose of preventing contamination through the raw surface, and of hastening involution whereby we diminish speedily the area of possible infection. Later, pelvic inflammation should receive attention. Uterine displacements must be rectified by the usual means. When all this has been done, the laceration, which still persists perhaps, requires treatment. This consists in the application of iodine, carbolic acid, nitric acid, or other stimulating agents to the parts, so that union starting in the angles may be obtained by the gradual drawing together of

the separated parts. Glycerin and tannin tampons, by keeping the parts pressed together, to some extent, in addition to draining the distended blood vessels, aid greatly in securing this end. And in some cases it is surprising how much good can be accomplished in this way. The last case I wish to introduce illustrates the efficacy of the plan of treatment indicated above.

In February, 1889, I was asked to visit a lady 36 years of age, the mother of quite a large family. For two years she had been under treatment for disease of the rectum, which showed itself by great pain in defecation and constant soreness referable to the pelvic viscera. Her disease had been variously described as "piles," ulceration of the rectum, and so forth, and she had been treated by enemata, suppositories, purgatives, etc. On examination no hemorrhoids were to be found, no fistula nor fissure; but when the finger had been passed a short distance above the sphincter, the patient began to complain of great tenderness. On making slight pressure I found a hard body pressing against the anterior wall of the rectum, and this body I readily recognized as the cervix uteri. Passing my finger into the vagina, I found the posterior lip of the cervix projecting like a spur in a backward direction. Further investigation showed a deep bilateral laceration of the cervix, the body of the uterus being in a position of anteversion. There was some leucorrheal discharge proceeding from the torn surface. The uterus was only slightly enlarged and was freely movable. The two portions of the cervix were quite hard, and the posterior part pressing against the recto-vaginal wall had produced symptoms of a painful affection of the rectum. The case was stated to the lady, and the opinion expressed that she could not be relieved without the performance of a surgical operation. To this she was unwilling to consent until an effort had been made to relieve her by other means. She came to my office for treatment twice weekly, and the parts were freely touched with iodine. Occasionally nitric acid was applied. A tampon of cotton saturated with glycerin and tannin was introduced behind the cervix. This removed pressure from the rectum, and by keeping the bowels regular the rectal pain was soon a thing of the past. Healing of the

laceration proceeded nicely, and by the end of May the lady had ceased to complain, the laceration was reduced to a minimum, the leucorrhœal discharge stopped, and the lady expressed herself as not having felt so well for many years. No examination has been made for ten months, but the patient says she is all right.

The cases I have mentioned were such as would have been, under the advice of some gynecologists, subjected to the operation of trachelorrhaphy. I believe I have accomplished as much for them without operation as could have been secured otherwise.

It is not intended to say that there is no place for Emmet's operation in gynecological practice. I have only aimed to show that too much was originally claimed for the operation, which has been abused by enthusiasts and unnecessarily resorted to when other means would have accomplished better results.

A PROBABLE CASE OF INTERSTITIAL PREGNANCY.¹

BY

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Surgeon to the New York Maternity Hospital, etc.

ON the 16th of September, 1890, Mrs. X., of Florida, was referred to me by Dr. Henry Schweig, of this city. She gave me the following history: 25 years of age; married ten years; five children; last delivery eighteen months previously. Her menstrual history was normal up to the last conception. She was nursing her baby at the time of its death in October of last year, and at this date she had no reason to consider herself pregnant. She did not menstruate during lactation, and the amenorrhœa continued to February, 1890, when she had sudden colicky pain in the abdomen, accompanied by profuse hemorrhage. Her family physician controlled the hemorrhage through rest in bed, ergot, and the vaginal tampon, but had no reason to think the patient was pregnant. The end of

¹ Read before the New York Obstetrical Society, October 21st, 1890.

March, 1890, renewed profuse hemorrhage set in, which nearly killed the patient, and at this time she passed what from her description may be assumed to have been membrane. Her attendant again checked the hemorrhage by routine means. The suspicion of pregnancy again did not occur to him. There certainly were no local or general symptoms present suggestive of this, for, from my knowledge of his high attainments, I am satisfied of his liability to err only in so far as to do so is human. From this date (March) on, the patient suffered from more or less profuse hemorrhages, sometimes associated with pain and again not. Finally her attendant advised her to consult a specialist, admitting frankly his inability to diagnosticate the cause of her condition.

When I saw Mrs. X., her appearance was the reverse of anemic. She was stout, her muscles flabby; she wore an anxious look, and complained of bearing-down pain in the left ovarian region, constipation, considerable thick, reddish-yellow discharge in the non-hemorrhagic intervals. Owing to the large amount of adipose in the abdominal parietes, I refused a positive opinion short of examination under anesthesia. I was only able to determine that the uterus was enlarged, the cervical canal patulous as far as the internal os, which was closed, and that the organ had sagged to the floor of the pelvis. The cervix was slightly lacerated and the perineum was torn externally—the muscles and fascia of the pelvic floor not having been implicated in the lesion.

On the 18th of September I examined the patient under ether, prepared to curette the uterus in the event of my being able to determine only a hyperplastic endometritis as the cause of her hemorrhages. Careful bimanual palpation revealed a heavy subinvolted uterus. The cavity measured four and a half inches in depth, and the body of the organ was not enlarged asymmetrically. I concluded that I was dealing with fungosities, possibly associated with a small submucous fibroid, very improbably with malignant disease of the endometrium. I curetted the cavity thoroughly with the sharp instrument, taking special precautions to investigate every nook of the organ. I removed masses of vegetations and débris, made a thorough application of pure phenic acid, and inserted, as is my custom, a gauze drain. The patient rallied well from the

anesthetic. I removed the drain in twenty-four hours, and, the uterus being atonic, I washed out the cavity with 2½-per-cent creolin solution. I ordered suppositories of the aqueous extract of ergot (gr. v.) every six hours. On the evening of the 19th I was summoned in haste by the nurse. The patient had had a severe chill, the temperature was 105° in the mouth, the pulse strong and 120 per minute; there was no discharge from the uterus. I was unable to account for either the chill or the temperature. There existed neither uterine nor peri-uterine tenderness on pressure; there was no fetor to the slight discharge present; the bowels had moved freely in the afternoon; there was no tympanites. The relatively slow pulse rate was reassuring, so I ordered fifteen grains of phenacetin, washed out the uterus with creolin solution (2½ per cent), and went home, determined in the morning to insert a tupelo tent and thereafter examine the cavity with the finger. In the morning (20th), about five o'clock, the husband of the patient came for me in haste. Mrs. X., he told me, was flowing profusely. When I reached her bedside I found that there had been a profuse hemorrhage, which my nurse had checked by the vaginal tamponade. The pulse was 100, strong; there was no temperature. I removed the tampon, inserted four fingers of my hand into the uterus, and from a *cavity* in the muscular wall of the organ near the left tubo-uterine junction I removed an adherent placenta, perfectly sweet to the smell, and of the size of that organ at the third to fourth month of gestation. I curetted this cavity, swabbed it out with pure phenic acid, and by massage obtained firm and equable uterine contractions. I ordered one-thirtieth of a grain of hydrastinin every six hours, and the convalescence presented no points of interest. On investigating the clots passed previous to my arrival, I found this flattened, partially desiccated fetus, of the age of possibly three and a half months.

This case is of interest from more than a single standpoint. In this city and elsewhere, during the past few years, the statement has been repeatedly made that, given the probability of the existence of ectopic gestation, the right course to pursue is to open the abdomen. I have not as yet become convinced of the justifiability of such a course in the absence

of symptoms of rupture, and the early history of this case strengthens me in the position I have maintained. During the physiological amenorrhea of lactation, when conception is possible, my patient was suddenly seized with cramp-like pains in the abdomen, followed by irregular hemorrhages, and later on by the passage of what from her description may be assumed to have been a membrane. In other words, her rational history pointed strongly to the existence of an ectopic gestation, and had she been in the hands of certain gentlemen who most ably, both by word and precept, argue for primary laparotomy, the abdomen would presumably have been opened; and the question arises, Would they have found an ectopic-gestation cyst? If Mr. Lawson Tait is correct in the deductions which he states from his extensive experience, a tubo-uterine or interstitial gestation inevitably results in rupture into the peritoneal cavity. If the case which I report was of this nature—and I assume it to have been such—the primary laparotomy might have availed; but the after-history proves that it would have subjected the patient to needless risk, and it also proves that tubo-uterine or interstitial gestation may remain quiescent after fetal death, and that ultimately the fetus may be passed *per vias naturales*. In other words, an interstitial-gestation cyst does not always rupture into the peritoneal cavity.

A further point of interest in this case is the fact that the patient carried a fetus and its adnexa for the period of at least sixth months after fetal death, without the development of the grave symptoms which the advocates of immediate emptying of the uterus after miscarriage, somewhat too dogmatically it would seem, assert follow the contrary course. In other words, this case apparently furnishes strong argument for those who claim that expectancy is the proper practice in case of incomplete miscarriage. We have all met with cases where retained membranes, retained placenta, in whole or in part, have been left to the efforts of nature without the development of the milder or graver forms of sepsis. Instances of the kind, however, in my experience, are exceedingly rare; and then the explanation of immunity is to be found in the fact that the retained portions were amply nourished, and, therefore, could not necrose and give rise to septic

infection. Such was undoubtedly the case with my patient, presuming for a moment, as is allowable, that the fetus and placenta were implanted normally in the uterus—a point which I will discuss later. Nevertheless I feel in this instance, as I have in a few others seen in consultation, that my patient's safety during these six months was at all times imperilled, and that in general, notwithstanding the exceptions quoted, it is a sound rule of practice to thoroughly empty the puerperal uterus *lege artis*, and not trust to the unaided powers of nature. In regard to the case reported, the lady returns to her home with a greatly subinvoluted uterus which will require protracted treatment, and this would have been avoided had the uterus been thoroughly explored in February or March—still assuming, for the purpose of argument, that the fetus and placenta were normally situated in the uterus.

A final point of interest is the question, Should this case be termed one of interstitial gestation? It is allowable to consider this case from the double standpoint of either an instance of normal uterine pregnancy with retention of the fetus for the period of six months, or else as an instance of encapsulation of the fetus within the muscular substance of the uterus—so-called interstitial pregnancy.

I grant the possibility of prolonged retention of a fetus and its adnexa *in utero*, but in the case I have reported I oppose the following facts as militating against such a supposition and as favoring the alternative view. I will recall the fact that when I curetted this case I thoroughly investigated every portion of the uterine cavity with the sharp instrument. Whilst it is possible, then, that the instrument passed over the surface of this fetus without either detecting or dislodging it, when I bear in mind the care with which I am in the habit of operating I am forced to the assertion that had this fetus been in the uterine cavity proper I would have detected it. Further, I will recall the fact that when, nearly forty-eight hours after the curetting, I removed manually the adherent placenta, I found it embedded in a cavity in the muscular substance of the uterus at the left tubo-uterine junction. Further still, at the time of probable fetal death (February) we have the classic signs in the rational history which experience has taught are the fairly uniform accompaniments of ectopic

gestation. Now, against the view that my case was one of interstitial pregnancy I can only cite Mr. Lawson Tait's assertion, which reads: "The process of development of an ovum in the tube, at any part of it, inevitably results in rupture of the tube. In the 'interstitial' cases the rupture, so far as is known, always takes place into the peritoneal cavity, and I cannot imagine any other way in which it might go, though we have assertions that a diagnosis has been made of tubal pregnancy which has ended by the ovum being discharged through the uterus. Such cases are easily dismissed from serious consideration, for I have never seen a specimen of interstitial pregnancy which could, by any possibility, have been diagnosed from normal pregnancy before the period of rupture. . . . Any man who gives an opinion that he diagnosed a tubal pregnancy, or any other lesion, and that its course was this, that, or the other, merely upon the unaided discrimination of symptoms or the dim light of a pelvic examination, I regard with so much suspicion that I do not accept his argument, save under exceptional circumstances" ("Diseases of Women and Abdominal Surgery," vol. i., p. 441; Philadelphia, Lea Bros. & Co., 1889). As opposed to these views of Mr. Tait I am able to bring to bear the statements of equally expert examiners and the fairly uniform belief of obstetrical writers that an interstitial pregnancy may rupture into the uterine cavity. In terming my case, therefore, one of "Probable Interstitial Pregnancy," if I err it is in good company, and the word "probable" saves me from the charge of dogmatism and possibly also renders my statements above suspicion. The view which I submit to your critical judgment is the following: In the month of February a tubo-uterine (or interstitial) gestation sac ruptured partially into the uterus. This partial rupture healed. In March my patient passed a uterine decidua. The pains and irregularly recurring discharges from which she suffered thereafter until she consulted me in September, were due to efforts of the uterus to rid itself of its parasitic intruder. When I curetted the uterus I broke down the wall dividing the true uterine cavity from the muscular bed in which this flattened, distorted fetus and its placenta lay. This traumatism spurred the uterus sufficiently to enable it to accomplish in forty-eight

hours what for nearly six months it had fruitlessly attempted—to expel the fetus. Such is my chain of reasoning, deduced from careful pelvic and uterine examination, and not from the “dim light” of exploration; and on it I rest the assertion that the case recorded is an instance of “probable” interstitial gestation.

To conclude, there is a further possibility which I dismiss in a word. Might this not have been a case of pregnancy in a bicornate uterus? My answer is that, had such been the case, the careful palpation to which this patient was repeatedly subjected by me would have revealed any such vice in conformation.

UNUSUALLY HIGH PYREXIA FOLLOWING CONFINEMENT,
WITHOUT APPARENT CORRESPONDING STRUCTURAL
LESIONS.¹

BY

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IN presenting the following case for discussion, I am prompted more by the selfish desire of throwing new light upon it from your wider and more extensive obstetrical experiences, than with the idea of especially interesting the majority of the members of this Society.

Its title, “Unusually High Pyrexia following Confinement, without Apparent Corresponding Structural Lesions,” has been given it, not on account of its appropriateness, but simply for lack of a more expressive name.

CASE.—Mrs. F., of this city, white, 23 years of age, primipara, was delivered Wednesday, June 19th, 1889, of a healthy child at full term, being attended in her confinement by Dr. Suter. He, leaving the city the following evening, confided her to my care. I saw the patient for the first

¹ Read before the Washington Obstetrical and Gynecological Society, March 7th, 1890.

time on Friday, June 21st, about 10 A.M. She was a large-framed, well-proportioned woman, and exhibited but few traces of her recent sufferings. She had passed her water freely and easily. The lochial discharge presented no abnormality in either quantity or quality, and her only complaint was an unsatisfied appetite. Her breasts, upon examination, I found to be full of milk, but, on account of contracted or sunken nipples, the child was scarcely able to nurse. This complication being artificially relieved, her condition was as favorable as could be expected or desired.

Saturday, June 22d, 10 A.M., patient's face was flushed, and her skin was hot and dry to the touch. Temperature was $104\frac{2}{3}^{\circ}$ F.; pulse 128. Respiration was hurried, but not labored or difficult. A most careful examination disclosed no cause for this exaggerated temperature. Her uterus was undergoing involution in an apparently perfectly normal manner; it was firmly contracted and about the size of an orange. Nor was there the slightest tenderness over any portion of her abdomen, although quite hard pressure was exerted. The lochia was losing its sanguineous character, but otherwise was unaltered, presenting neither a marked diminution in quantity nor a disagreeable odor. Her breasts were soft and compressible, and the flow of milk was free and easily extracted. Her tongue was moist and slightly coated, but not furred, nor did she complain of thirst or headache, and her mind was perfectly clear.

On questioning her I learned she had spent a very comfortable night, sleeping most of the time, but on awakening at about 6:30 she was chilled through and through, and felt cold chills running up and down her back. This condition, however, had been attributed to the lowering of the outside temperature during the night and the scantiness of her covering; for after having some bottles of hot water placed at her feet and her covering increased, it had rapidly passed off, and at the present time, although she was conscious of being unusually warm, still she was in complete ignorance of the height of her temperature, or even of the presence of any fever at all, thinking her flushed face and hot skin were due simply to the elevated atmospheric temperature.

This chill followed by fever, and the absence of any

other symptoms of inflammation or septicemia, together with the season of the year and the location of her residence—which was in a low-lying portion of the city near the newly made flats and river—pointed to the entrance of a malarial complication, and led me to suspect intermittent fever, though fearing at the same time a more serious affection.

I ordered carbolized vaginal injections, one drachm to the pint, every four hours, and, as her bowels had been costive since her confinement, 3 ij. of castor oil, gtt. 15 of turpentine, and mucilage acacia q. s. fl. $\frac{3}{4}$ i. to be taken at once, also 3 ss. of quin. sulph. in six capsules, one to be taken every four hours; and directed that the child be kept from the breasts while the fever lasted, requesting the nurse to draw off the milk should the breasts become full and tense.

Six P.M., bowels had moved freely and painlessly about an hour before my arrival. Temperature, instead of falling during the day, had risen to $104\frac{4}{5}^{\circ}$, pulse 130. There being no indication of cinchonism, I ordered a continuance of the quinine and injections.

Sunday, June 23d, 10 A.M., temperature $104\frac{2}{5}^{\circ}$, pulse 123. Patient had passed a rather restless night, but not an extremely uncomfortable one, having slept a large portion of the time. Her bowels had moved again about 7 A.M. At 8 P.M. she had eaten two soft-boiled eggs and some stale bread, and drank a cup of tea, and shortly before my arrival she had taken a tumbler of milk. There was still no apparent correspondence between this extreme pyrexia and her general condition, which was unchanged from that of the previous day.

I ordered 3 ss. of antifebrin in three powders, one to be given immediately, and the second four hours later.

At 5 P.M. temperature was $104\frac{1}{2}^{\circ}$, and the third antifebrin powder was given. At 11 P.M. temperature was $104\frac{1}{5}^{\circ}$, pulse 132, and I then gave two grains each of quin. sulph. and antifebrin every two hours—which combination has frequently reduced high temperatures after the failure of either alone—and directed the carbolized injections to be given every three hours. The breasts being full of milk, the nurse was requested to draw it off.

Monday, June 24th, 10 A.M. Patient had spent a very rest-

less night, and was manifesting signs of exhaustion; temperature was $104\frac{3}{4}^{\circ}$, pulse 129. Contrary to directions, the nurse had neglected the breasts, which were now quite tense and full of milk, but were neither hard nor painful.

Having failed to make a diagnosis, and being unwilling to assume the entire responsibility of the case, I requested a consultation, and at 1 P.M. Dr. D. R. Hagner kindly saw the case with me. He, too, after a most thorough examination, failed to find a cause for the high fever—temperature at this time being 105° F.—other than the tenseness of the breasts; but this condition was excluded on account of its recent development, having presented itself that morning for the first time.

At Dr. Hagner's suggestion the breasts were enveloped in hot flannel cloths saturated with camphorated oil, and a tablespoonful of the following mixture was given every three hours to reduce the temperature:

R Tincturæ Aconiti..... gtt. vi.
 Spiritus Ætheris Nitrosi..... 3 vi.
 Liquoris Ammonii Acetat..... ad fl. 5 iij.
 M. Fiat sol. Sig.: 5 ss. in water every three hours.

At 11 P.M. patient was decidedly improved in every respect: temperature had fallen to $103\frac{1}{2}^{\circ}$; pulse 116, fuller and stronger; her skin was more natural to the touch, and her breasts were softer and more elastic.

Tuesday, June 25th, 10 A.M., Dr. Hagner again met me in consultation. Patient was so much improved that all of my anxieties were completely quieted. Temperature was only $98\frac{4}{5}^{\circ}$; pulse 82, full and strong; her skin was cool and moist; breasts soft and compressible. The attendant was directed to draw off all of the stale milk, and then to allow the child to nurse. The fever mixture was stopped, but the carbolized injections were continued, and an enema was ordered for her bowels.

At 6 P.M. condition of patient was unaltered; her bowels failed to respond to the morning enema, so I had it repeated, and with better result.

Wednesday, June 26th, temperature was $100\frac{1}{2}^{\circ}$ at 10 A.M., and by 5 P.M. it had risen to 103° . The aconite, nitre, and ammonia mixture was immediately resumed, and at 11:30 P.M.

temperature had descended to $99\frac{2}{5}^{\circ}$. I now lengthened the intervals between the doses of the fever mixture from three to five hours, instead of entirely discontinuing it as was previously done.

Thursday, June 27th, 10 A.M., temperature was $98\frac{3}{5}^{\circ}$, pulse 79. The dose of the fever mixture was reduced one-half, and this quantity given only three times a day. At 6 P.M. temperature and pulse were still about normal, there being no appreciable change from her morning condition.

Friday, June 28th, I saw patient but once during the day. Temperature and pulse were still about similar to those of the previous day, and patient requested permission to get up, as she had never felt better in her life; this was not permitted, but I stopped the aconite mixture.

Saturday, June 29th, at 11 P.M., just twenty-four hours after the cessation of the fever mixture, patient's temperature was up to 102° . Still fearing septicæmia, and hoping to exert a permanent influence on the temperature, I decreased the intervals between the carbolized injections to two hours, and ordered 3 ss. of quin. sulph. in six capsules, one to be given every three hours.

Sunday, June 30th, 10 A.M., temperature was normal, this being the first time it had yielded in the slightest degree to the administration of quinine. Towards the close of the day the temperature again ascended, and the quinine was renewed; but this time without benefit, for on Monday, July 1st, at 11 A.M., to my surprise the temperature had gone up to $104\frac{1}{5}^{\circ}$, pulse 138; otherwise her favorable condition was unchanged, and I could get no history of chill preceding this rapid elevation. The mixture of aconite, nitre, and ammonia was once more resorted to, and by 6 P.M. temperature had fallen to $99\frac{1}{5}^{\circ}$; the fever mixture was given in smaller doses and at longer intervals, and by morning her temperature was normal. From that time on there was no rise of temperature or development of abnormal symptoms of any kind, and on Wednesday afternoon patient was allowed to sit up; the aconite mixture was stopped the previous day. Friday, July 5th, she was returned to Dr. Suter, who subsequently informed me that she rapidly regained her health and strength.

Remarks.—Quite recently, and since the preparation of the

above report, Dr. Suter has given me some additional history concerning the case which may materially assist in determining its pathology. The labor was a prolonged one, and the child was delivered with instruments. Moreover, some weeks after dismissing the case she suffered very much with bladder trouble, which was followed by symptoms of lacerated cervix. However, no examination was made, and no treatment—at least no local treatment—was used; but from last accounts she was very much improved.

Although possessing this recently added history to aid me, and having had abundance of time to study over the case, I still have no definitely formed opinion concerning its pathology, nor have I obtained much assistance from the literature upon this subject. I found in the medical journals a number of cases bearing a close symptomatical resemblance to the case just recorded, and divers causes were assigned for the elevation of temperature in the different cases. Some of them were reported as “intermittent fever following confinement, or intermittent fever resembling septicemia,” others as “puerperal fever without evidence of septicemia,” and still others as “septicemia, or puerperal septic infection.” The case I have reported simulated to some extent the cases recorded as being of malarial origin, and also those of septic origin, and hence arises my confusion in classifying it, assuming the recorded cases to have been correctly diagnosed.

A review of the case gives reasons for and against each theory. In support of the malarial origin we have the season of the year, location of patient's residence, absence of typical septic symptoms, and the happy termination of the affection; while in opposition we have the liability to septic absorption of all parturient women after a tedious labor and one that was terminated with forceps, and the failure of quinine to influence the temperature.

In discussing a septic origin we should consider not only septicemia proper, or septic infection, but also septic intoxication. This latter term requires a word of explanation. In our text books it is pretty generally ignored or else confused. By some writers it is spoken of as a mild form of septic infection, being embraced with that affection under the name of septicemia, while others consider the two diseases one and

the same thing. As I was taught and understand them, they are two entirely separate and distinct affections.

Septic intoxication, or putrid intoxication, also called by Duncan sapremia, is a disease produced by the entrance into the circulation of a chemical poison which has not the power of reproducing itself. This poison may arise from the putrefactive decomposition of retained portions of the placenta, or from any putrefying matter, either animal or vegetable. Symptoms of the disease are chill followed by fever and generally diarrhea. This fever is increased or continued by each additional supply of the poison; but without the addition of new poison the fever diminishes and ceases. This poison has no distinctive germ other than the ordinary bacteria of decomposition, and these have not the power of attacking live tissues; hence septic intoxication is never followed by the formation of metastatic abscesses.

Septic infection, on the other hand, is produced by the absorption of definite pathogenic germs which can reproduce themselves and which have the power of destroying living tissues, and may lead to the formation of metastatic abscesses, or may produce death without the presentation of these local affections. Symptoms are those ordinarily given for puerperal fever.

In support of septic infection as the cause of the pyrexia in the case just reported, we have the forceps delivery and the subsequent symptoms of lacerated cervix; while antagonizing this cause is the absence of the usual typical septicemia symptoms other than the fever, and the course and termination of the temperature.

Excluding malaria, the history and course of this fever point more directly to septic or putrid intoxication. If the uterine cavity had been thoroughly washed out during the progress of the disease, this point might have been conclusively solved; but unfortunately this was not done. Consequently in my mind the pathology is still in doubt, and in conclusion I ask for a discussion on these points concerning the pyrexia presented.

Was it of malarial or of septic origin, or was it due to some other cause which I have failed to mention?

THE FIFTH AND SIXTH POSITIONS OF THE VERTEX, WITH
REMARKS UPON THE MANAGEMENT OF OCCIPITO-
POSTERIOR POSITIONS.¹

BY

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Cincinnati, Ohio.²

(With four woodcuts.)

As there is a want of agreement, among obstetrical authorities, as to what constitutes a fifth and sixth position of the vertex, as well as to the practicability of so many divisions, I would have it understood that, in the following, an occipitopubic is considered a fifth, and an occipito-sacral a sixth position of the vertex.

CASE OF OCCIPITO-SACRAL POSITION.

April 2d, 1890, at 2 P.M., I was called in consultation by Dr. C. S. Muscroft to see Mrs. Y., æt. 28, who had been in labor since the preceding midnight. The doctor stated that the membranes ruptured spontaneously, and that the os was fully dilated early in the morning. Labor progressed favorably until the head appeared "at the brim." Here it was arrested. Not the slightest descent being effected for several hours, I was called in to assist in the further progress of the case.

Examination revealed a very tender, fleshy abdomen, which prevented the outlining of the position of the child. Fetal heart could not be detected. Movements of the child not perceptible. Vaginal touch suggested an ample pelvis, with soft parts still in good condition. An excessively large caput succedaneum made it impossible to ascertain with exactness the position of the head. The fontanelles could not be felt.

¹ Read before the Cincinnati Obstetrical Society, June 12th, 1890.

The cranial bones, with an ill-defined suture between them, pressed hard against the pubic bones, suggesting an occipito-anterior position with slight extension of the head; posteriorly also a suture running parallel to the conjugate could be felt.

Diagnosis: Fifth position of the vertex with extension of the head, causing arrest at the brim (occipito-mental diameter on a level with the pelvic plane of the inlet). The suture resting against the symphysis pubis was supposed to be the sagittal, the one felt posteriorly the frontal. (See Fig. 1.)

On further inquiry it was ascertained that the first child (this being the second labor) was still-born "at term," in a similarly protracted confinement. This led me to suspect a

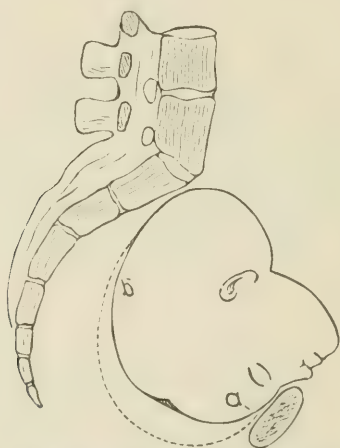


FIG. 1 represents the idea of the position entertained before descent of the head; *a* was believed to be the sagittal and *b* the frontal suture.

possible "justo-minor" or an extremely large head, though digital examination did not support my suspicion. Acting upon the belief that I was dealing with an occipito-pubic position, chloroform was given and the forceps applied. The instruments were introduced, adjusted, and locked with ease. At first gentle, gradually more, and finally all the traction was made which could be brought to bear upon the forceps, but to no purpose. The head remained fixed in its position. Another examination, with the forceps in position, gave no clue as to the nature of the obstruction, except as stated—extension of the head. An effort to push up *the fore-*

head and *flex the head* proved futile. With the next pain I placed one finger in the rectum with a view to holding up the *forehead*, while I made traction in the direction of the axis of the "bony outlet." To my surprise I discovered that, during traction, the distal extremities of the blades of the forceps left the head and remained in contact only with what I supposed was the occiput, forming at this region a sort of pivotal point in front, while the tips of the blades impinged upon the soft parts of the mother posteriorly. Traction was at once suspended, with the intention of removing the forceps and for the purpose of introducing my hand, in order to determine, if

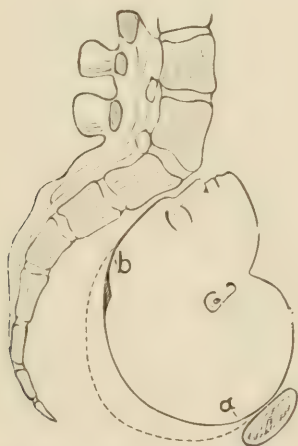


FIG. 2 represents the position as it really was; *a*, posterior extremity of sagittal, and *b*, the frontal suture. Comparison between Figs. 1 and 2 will show how the error in diagnosis was possible.

possible, the real cause of delay. However, before I had time to execute my purpose, nature came to my assistance and fully explained the apparently mysterious obstruction. A pain suddenly supervened, during which the head was brought down to the pelvic floor; but instead of the occiput, the forehead presented itself squarely under the pubic arch. The forceps was now quickly removed. The next pain brought the forehead and part of the large caput succedaneum within the distended vulva (Fig. 3). The next pain brought down the head, distending the perineum in the direction of the axis of the bony outlet to an enormous extent, and for a moment it

seemed as if this structure would be torn from one end to the other, while the eyes, nose, mouth, and chin gradually emerged successively from under the pubic arch. The chin once released, flexion of the head became possible, and the unshapely head of a well and fully developed living child was born without the slightest injury to the perineum and other soft parts. The shoulders descended in the transverse diameter until they reached the floor of the pelvis, where they rotated into the right oblique; the right shoulder became subsequently

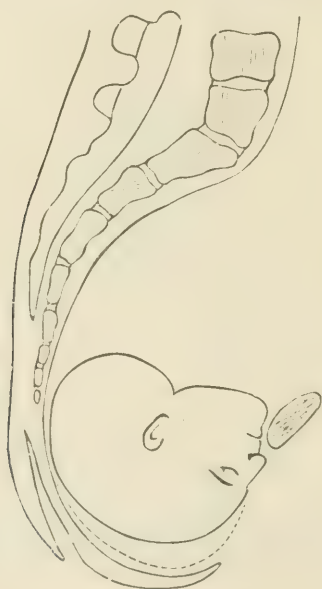


FIG. 3.—Position of the head after the sudden descent (forceps applied).

fixed behind the os pubis, while the left swept over the perineum first. No further difficulty was experienced. The placenta followed quickly with the aid of the Credé method. Both mother and child did well.

REMARKS.

The question presents itself as to whether *this was a case of occipito-sacral position from the beginning of labor.* Though the diagnosis of this position was not made until the head was in process of delivery, I am firmly convinced that

it was: First, because the frontal and what little could be felt of the sagittal suture presented itself directly in the conjugate diameter of the pelvis; this I maintain, notwithstanding that the one suture was mistaken for the other. Second, because the caput succedaneum was squarely planted upon the anterior portion of the top of the head, covering an area including the upper limits of the frontal eminences in front, a point midway between the anterior and posterior fontanelle



FIG. 4.—Manner in which head was expelled.

behind, and extending about an inch from the anterior fontanelle to either side. Such an excessive amount of swelling and moulding can be produced only by long and continued pressure in the same direction. The child was born within three-quarters of an hour after my arrival; the temporary deformity of the child's head, therefore, was produced before I came upon the scene. Hence I cannot assume that it might not have been, at first, an occipito-posterior to the right or the left, and that rotation into the conjugate occurred during the

passage of the head through the pelvic channel. Were this so, the well-pronounced caput succedaneum would have been found to be upon one or the other parietal bone, and the anterior fontanelle would not have been obscured. Third, because the forceps was introduced, applied, and locked with ease while the head was still "at the brim." Had the head occupied one or the other of the oblique diameters, it would not have been so easily applied and locked, and the marks of its application would have been left on one side of the occiput and over one of the frontal eminences; as it was, no trace of it could be noticed upon the head. Fourth, had this been an occipito-posterior, left or right, delivery of the head would in all probability not have terminated as it did. One of two things would have occurred: either rotation into a first or second position of the vertex, or the occiput would have sought the hollow of the sacrum and by extreme flexion of the head would have swept over the perineum first, with the forehead, face, and chin following in the order mentioned. Exceptions to this I have never observed, though it is not impossible that they may take place. I am convinced, therefore, that this was a case of an occipito-sacral position from the incipieny of labor; that the occiput was detained by the promontory of the sacrum, but not sufficiently so as to make it a face presentation. Cause of the position unknown. As stated before, the pelvis seemed perfectly ample (the measurements were taken with the hand only). It remains, therefore, a matter of speculation in this case as to what factors compelled this head to assume and remain in the position just indicated. The infant weighed about nine pounds, its head being of average size.

Criticism may be offered as to my diagnosis previous to the employment of the forceps, in reference to which I would say I believe myself possessed of the so-called *tactus cruditus*, and am not disposed to relinquish my confidence in it. There appeared to be no necessity for the introduction of the hand, as I was quite certain of the presence of an occipito-anterior position; while the prompt recourse to instruments was warranted by the presence also of the following conditions, namely, long-delayed labor, impossibility to detect the fetal heart, absence of fetal movements, extreme tenderness of the

abdomen, and the manifest exhaustion on the part of the patient.

This case is of more than ordinary interest, inasmuch as it demonstrates that in an apparently normal pelvis the head does not always seek the largest diameter at the brim, and that a fully developed child may traverse, with tolerable safety to itself, the parturient canal in the occipito-sacral position, head partly extended. If this is possible in this position, we cannot deny the plausibility that the same may occur where the occiput presents posteriorly either to the right or left. Yet it would not be wise to recommend or practise non-interference in these cases, when in many instances, if not in all, we have it in our power to bring about flexion of the head in any of the occipito-posterior positions; for it must be always remembered that by securing the desired flexion of the head dangerous delay may not always be avoided, but spontaneous rotation into an occipito-anterior position may be rendered possible.

The case is of additional interest in so far as it proves that the brevity with which nearly all authors of modern text books of obstetrics dismiss the subject of vertex presentations, is not altogether justifiable. They confine themselves, as a rule, to four positions only, and, if they speak of an occipitopubic and occipito-sacral at all, it is simply by stating *that they may occur, but that before the head has passed any distance into the pelvis it assumes one or the other of the more frequent four to which they have called attention; and that therefore it is deemed needless to dwell upon the mechanism of the fifth and sixth positions.*

That presentations and positions have been multiplied without good reason there can be no doubt. The tendency to simplify the study and practice of obstetrics is certainly commendable and deserves encouragement, but experience convinces me that both the fifth and sixth positions of the vertex are sufficiently frequent and distinct to merit a permanent place in the order of descriptive midwifery. A description of the frequently occurring four may serve the purpose of young students and midwives, but a want of familiarity in regard to the occipito-sacral positions admits of no excuse on the part of educated, scientific obstetricians, and therefore all text

books written to be of service to the practitioner and student should give the fifth and sixth positions the consideration they deserve.

Simpson, Elliot, Spiegelberg, Playfair, Lusk, and Winckel do not speak of the fifth and sixth positions at all. Leishman (Parry) and L. King dismiss them with short notice. Gardien, Velpeau, Moreau, and Hodge follow Baudelocque (who was the first to describe the sixth position) and give a description of them; so does Penrose in Hirst ("American System of Obstetrics"). Naegele, who met with two cases of the sixth, describes two principal positions of the vertex (left occipito-iliac and right occipito-iliac), each with three subdivisions. Many of the German and French authors follow Naegele in their classification. Cazeaux and Tarnier give no description of the fifth and sixth positions, but mention them in their tabulated record of the various classifications of the different authors quoted in their work.

The object of including in my remarks upon the case reported the occipito-pubic position is: first, because I mistook the sixth for a fifth position in the instance reported; and, secondly, because I wish to elicit the expression of opinion of the members of the Society regarding the frequency of its occurrence, as also the characteristics of its conduct during delivery. My own opinion is that these positions (the fifth and sixth) are perhaps much more frequent than is ordinarily supposed. It is maintained that the sixth position is more frequent than the fifth; but I am inclined to believe that this view is not based upon facts gained by personal experience, but rather upon the few cases observed by some and as quoted by others. The lack of reported cases belonging to these two classes may be explained by the comparative frequency with which occipito-sacral and occipito-pubic positions assume one or the other more frequent varieties; and it is not at all unlikely that many an occipito-sacral position may, under favorable circumstances, terminate as an occipito-anterior or even as a face (mento-anterior) position. If, in addition, we take into consideration the difficulties which often surround the making of an early and precise diagnosis, and many times a want of diagnostic skill, if not indifference, on the part of the accoucheur, besides the manifest disposition of

obstetric authors to ignore these positions altogether, we have a sufficient and satisfactory solution of the *variety* of case reports and the *infrequency* with which cases of the fifth and sixth positions are observed.

According to Hodge, Madame Boivin observed the occipito-pubic position six times, Dewees three times, and Hodge himself met with several instances. The occipito-sacral position was seen twice by Madame Boivin and twice by Naegele; Dewees is credited with three and Meigs with two cases.

THE MANAGEMENT OF OCCIPITO-POSTERIOR CASES.

In the management of these positions of the vertex everything depends upon the diagnostic skill, manual dexterity, and acuity of judgment of the attending physician. If he is on the alert, he may, in the majority of instances, be instrumental in preventing complications, not only in the way of unnecessary delay in labor and long, severe suffering on the part of the woman, but also as to the impending danger of delivering an asphyxiated or perhaps a dead child. In no other variety of vertex presentations has the obstetrician so great an opportunity to display his skill, knowledge, and judgment as here. Not infrequently have we occasion to observe that, in these cases, both mother and child are seriously injured by misdirected efforts to facilitate labor, especially when the forceps is applied too early. The disrepute into which the "*frequent use of the forceps*" has fallen has, to a great extent, its foundation here. It is, then, perfectly safe to assert that the skilful management of occipito-posterior positions depends upon an exact diagnosis and a thorough familiarity with the mechanism of labor.

My own rule of practice has been never to interfere so long as the head descends with each pain and the screw-like motion of the head becomes manifest as soon as the pelvic floor has been reached by it. An easy descent always denotes a sufficient flexion of the head; and the more pronounced rotating of the same, when the opposing elements from below become operative, always signifies with great certainty that a change into an occipito-anterior position will be effected by the unaided efforts of nature. Therefore assistance on the part

of the practitioner is superfluous, if not meddlesome, under such circumstances. But when the head is slow in descending, or arrest is threatened or has already occurred, the index and middle fingers of one hand should be introduced and placed immediately in front of the anterior fontanelle. With each contraction of the womb, pressure is then made upon the forehead in the direction opposite the descent of the occiput. In an O. P. R. this will be upward, backward, and to the left; in an O. P. L. it will be upward, backward, and to the right; in an O. S. it will be directly upward and backward at first, and later either to the left or right, just as the disposition of the head may indicate into which oblique diameter it tends to rotate. I am seriously inclined to question whether it is proper to institute further manipulations when, notwithstanding perfect flexion, the head seeks the hollow of the sacrum. Though fully aware that the life of the child and the perineum are seriously in danger, there are nevertheless cases in which labor terminates without much delay, serious inconvenience to the child, or extensive laceration of the perineal structures; and for these reasons it may not be unwise to wait and watch, for a reasonable time at least, in order to determine what nature is able to accomplish, especially when the soft parts of the mother are still in good condition and the child's vitality unimpaired. Further manipulations require the use of complete anesthesia; and as this is an additional risk, the patient should not be subjected to it without good cause. When it has become evident, then, that rotation into occipito-anterior position will not take place, and that delivery with the occiput posterior is not only delayed but arrested, in order to save the child's life, and to curtail needless suffering on the part of the mother, and to prevent injury of the parturient tract, I do not hesitate to anesthetize to absolute unconsciousness, for the purpose of introducing the whole hand into the vagina, there to seize the head, carry it above the brim, and turn it, if a third, into a second, and, if a fourth, into a first position. There the hand holds the head and is not withdrawn until the head is fixed in its new position by the following contractions of the uterus. Having succeeded in this—and I have never failed—the case may be left to nature if the pains are vigorous and effectual; if not, or if there is marked exhaus-

tion on the part of the mother, or the fetal heart's impulse denotes a rapidly failing pulse, the forceps is to be brought into requisition and the child extracted as speedily as the condition of both mother and child will permit. To apply the forceps when the occiput is still posterior, with a view of turning, as has been recommended by some, is in my opinion a difficult and dangerous procedure; this requires more skill than most men have an opportunity to acquire, and even in the hands of the skilled and experienced I doubt the wisdom of their application. Similar objections may be raised against the delivery with the forceps with the occiput still posterior, because no forceps is so constructed as to firmly grasp the head when in this position, and the hold which is secured always tends to pull the chin from the chest if flexion is complete; and if not, so much the worse, for then it will require very little traction only to throw the head with its longest diameters across those of the pelvis. Cases in which the head becomes arrested when the occiput is almost ready to pass the perineum form an exception, but even here the vectis might answer the purpose as well, if not better. The only instance in which I performed craniotomy (about seven years ago) was a case in which a partly extended head was drawn down in an occipito-posterior position by the premature application of the forceps. The head was at the inferior strait and the child dead. In all other instances of arrest and impaction of the head that have come under my care, the head was invariably pushed up above the brim, rotated anteriorly, and delivered spontaneously or by the forceps, with the infant living.

TRANSACTIONS OF THE NEW YORK
OBSTETRICAL SOCIETY.

Stated Meeting, October 21st, 1890.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

VAGINAL HYSTERECTOMY FOR CANCER OF THE UTERUS.

THE PRESIDENT presented two specimens. The first gave the following history: A widow, 53 years of age, fifteen or sixteen years ago was under treatment by a gynecologist of this city, who recognized a fibroid of fair size in the left side of the uterus. She was made as comfortable as possible under the circumstances. During the past year she had had almost daily hemorrhages, and more recently the discharge had become very offensive. When she came under the speaker's notice two weeks ago he found considerable enlargement of the uterus; it measured three and a half inches in depth, and a small prominence, evidently the remains of the fibroid, could be felt on the left side. The patient was in an exhausted condition owing to the constant discharge. He had no hesitancy in pronouncing the case one of malignant disease of the body of the uterus, probably cancerous in nature, and told her that, if adhesions did not contra-indicate extirpation, he would do vaginal hysterectomy. He operated October 15th, a week ago, in his usual way, first dissecting anteriorly, then posteriorly, and met with no special difficulty, except that the broad ligaments were unusually broad and required the use of two pairs of forceps on either side. The patient passed through the operation in good condition, showing no untoward symptoms until after about fifty-two hours. The pulse was only 74, the respiration normal, the bowels had moved, the vaginal tampon had been changed, and the forceps removed forty hours after the operation. The temperature had not gone above 100° F. He was then sent for, and learned that at about midnight she had been seized with intense pain in the lower abdomen, and was quite tympanitic. He passed a long rectal tube and moved the bowels at once. It seemed evident that she was going to have a severe attack of peritonitis. Having moved the bowels, he gave morphine by hypodermic injection to quiet pain. After about two hours she began to vomit, as patients with septic peritonitis are likely to do, and con-

tinued to vomit, in spite of his efforts to check it, until death on the 18th. This was his second fatal case from vaginal hysterectomy (the other having occurred about fourteen months ago). All other cases had recovered. Post-mortem, twelve hours after death, showed plastic exudation on the intestines, and about two teaspoonfuls of highly offensive brownish secretion in pelvic cavity. In other respects everything was as it should be.

PYO-SALPINX.

The other specimens presented by the President consisted of the tubes and ovaries, which were inflamed and enlarged and the seat of pus sacs. The patient had been transferred to his ward from Dr. Bulkley's at the Skin and Cancer Hospital, where she had undergone syphilitic treatment. He performed laparotomy on Friday last, removing the enlarged and adherent tubes and ovaries, the latter containing small cysts. The right tube was much elongated, and so closely adherent in its entire length to the ascending colon, and at its upper end so very brittle, that he was compelled to leave about an inch and a half through fear of perforating the gut. The patient was convalescing, and no unfavorable symptoms had followed the operation.

DR. H. C. COE asked the President whether the uterus had been examined microscopically, and, receiving a negative answer, said that it appeared to him to be a case of sarcoma, or rather of malignant adenoma, which would make the specimen of unusual interest. The association of cancer and fibroids was formerly considered not only rare, but was thought by some never to occur. However, he had had some cases at the Cancer Hospital, and he remembered a specimen presented to the Society by the late Dr. Dawson, in which there were multiple fibroids of the uterus associated with malignant disease of the endometrium. He thought, therefore, the idea that we never find fibroid and cancer together was erroneous.

Another question was whether fibroids ever became cancerous. He had showed a specimen to the Society about two years ago which he thought answered this question in the affirmative, although the fact had been doubted by some. It would be interesting to learn, on making sections of the specimen presented by the President, whether the fibroid itself was involved in the malignant disease or whether they were sharply separated.

There was an interesting point in diagnosis in such cases. One might infer from the presence of a fibroid that the hemorrhage was due simply to the accompanying endometritis fungosa, and might not suspect malignant disease. The speaker had had three cases in which there was a fibroid uterus, and

in which he did not at first feel assured that there was no malignancy. In two he scraped the uterus twice before feeling positive on this point.

Another point of interest related to the difficulty in operating per vaginam, owing to the large size of the fundus; he had been compelled to resort to laparo-vaginal hysterectomy on this account, and had seen the same procedure followed by others, especially where the vagina was narrow.

The PRESIDENT said the microscopist had not yet had time to complete the examination of the specimen presented.

DR. FLORIAN KRUG said he had been much interested in the question of the possible association of malignant disease and fibroids. He had recently had two cases which seemed to come under that heading. In one, on which he operated just two weeks ago, there existed quite a large fibroid on the right side of the uterus. The patient was 57 years old and had been bleeding considerably. He curetted the uterus in July, largely for diagnostic purposes. The scrapings were submitted to a well-known microscopist, who made the positive diagnosis of malignant disease. The patient, however, refused to be operated upon at that time, and came under his care again this fall with the story that she had been bleeding. A second microscopical examination was made by another pathologist, who diagnosed adenoma. Dr. T. G. Thomas kindly saw the case in consultation, and they concluded that it was best to remove the uterus. Dr. Krug performed the operation, but was yet in the position of the President with regard to his case—unable to say whether it was a case of adenoma or one of carcinoma.

While this case was open to doubt as to its malignancy, two pathologists not agreeing in their reports, another case, on which he operated in April, was conclusive that carcinoma might exist with fibroids. Still, sarcoma was more likely to be the complicating disease.

The PRESIDENT agreed with Dr. Coe as to the difficulty of diagnosis in many of these cases of fibroid degeneration of the uterus. He at the present time had two cases under observation, one of which had been under his care four years, the other one year, in each of which curettings had been examined by two different pathologists, both of whom said they presented every appearance of adenoma. The clinical history, however, was such that he rejected hysterectomy for the time, taking his chances on simply curetting. The first one, curetted several times three years ago, now 53 years old, was apparently perfectly well; the uterus had diminished to about its normal size, and there was no discharge. In the other case, of more recent date, the uterus was still enlarged by the presence of a fibroid, the cavity four inches and a half in length, the age of

the patient 47. She was constantly improving, and there was every indication that she would recover entirely. The same microscopist who had examined the scrapings last winter and in June had found on the last occasion (one month since) evidence only of broken-down fibroid tissue. It appeared, therefore, extremely difficult, even with the help of the pathologist, to establish an exact diagnosis. When the patients were doing well under local treatment, the discharge diminishing, the anemia disappearing, and everything apparently progressing favorably, he thought it the surgeon's duty to refrain from extirpation.

FIBROID OF THE UTERUS.

DR. RALPH WALDO presented a uterine fibroid removed on the 15th of October by Dr. C. C. Lee. The patient was 34 years of age, had given birth to three children, the youngest being 3 or 4 years of age. She had severe hemorrhage, and her attending physician, Dr. Hammond, of Greenpoint, found on examination a tumor projecting from the cervix, and requested Dr. Waldo to see the patient with him last June. Dr. Waldo found a tumor about the size of his fist projecting from the os. The patient had bled very profusely every second or third menstrual period, consequently it was decided to have the tumor removed at once, which was done at the Post-Graduate Hospital by Dr. Lee. Although the capsule of the tumor was very thin and it appeared the process of enucleation would prove easy, yet on operating it was found that the attachment to the posterior wall from the fundus to the cervix was very close and had to be severed by the knife. The uterus was then packed thoroughly with iodoformized gauze, cotton inserted into the vagina and left forty-eight hours, when, a little blood appearing, both were replaced by fresh tampons which were allowed to remain thirty-six hours. After this a vaginal douche was employed, one part of bichloride of mercury to five thousand of water. It had not been necessary to give any opium to relieve pain.

DISEASED OVARIES AND TUBES.

DR. WALDO also presented two ovaries which he had assisted Dr. Lee in removing that same afternoon. He knew little of the history of the patient further than that she had been in the hands of a number of physicians during several years, who were unable to give her much relief through palliative treatment. Her condition having become steadily worse, Dr. Lee opened the abdomen, tore up the very strong adhesions which bound the uterus posteriorly, and removed the cystic ovaries and diseased tubes. The specimens had not yet been submitted to microscopic examination.

DR. R. A. MURRAY, referring to the first specimen, inquired whether there had been anything abnormal with the last labor.

DR. WALDO replied that the last child was born three years ago, and, as far as the history went, the labor was normal. The patient regarded herself as perfectly well until within a year.

DR. MURRAY remarked that the rapidity of growth of intra-uterine fibroids was in some cases an interesting subject for study. He had seen cases where delivery was apparently absolutely normal, yet examination shortly afterward revealed an intra-uterine fibroid of considerable size.

OVARIAN FIBRO-CYST.

DR. A. H. GOELET presented a tumor which he had removed on Saturday last, being assisted by Dr. Hanks, who had seen the patient with him previously. It consisted of a cyst with thick walls, which contained about a quart of bloody fluid and organized blood clots. The walls were thickened by a deposit of organized lymph, rendering the tumor very firm to the feel. It was attached to the fimbriated extremity of the left tube.

The patient was a colored woman about 36 years of age ; had borne one child ; had two abortions, one before and one after the birth of the child, which was then 6 years old. She consulted Dr. Goelet about September 1st for a large abdominal tumor extending considerably above the umbilicus. She had not menstruated for three years. The tumor, she said, had given her no trouble whatever until the latter part of August, at which time she rode a distance of eighteen miles over a rough country road. She immediately began to suffer considerable pain and uneasiness, and the tumor increased in size perceptibly.

Dr. Goelet found the tumor hard and unyielding. The uterine cavity measured five inches and a half and was not sensitive. After nine applications of galvanism to the uterine cavity, six of which were negative, the tumor became perceptibly softer and fluctuation could be distinctly felt through the abdominal walls. The strength of the current used was from one hundred to two hundred milliamperes. The uterine canal decreased in depth two inches and a half during the treatment. The case seemed to show that the length of the uterine canal and its tolerance of the current in large doses could not be depended upon in the diagnosis of fibroids, as is generally supposed.

At the operation there were found a good many adhesions on the posterior surface of the tumor where it rested upon the bowels. The patient was doing well, and gave promise of a good recovery.

Replying to interrogatories, DR. GOELET said it was probably a cyst of the ovary. The other ovary was sound. The uterus was very large, but not abnormal in other respects. He had first made a diagnosis of uterine fibroid.

DR. COE thought that this case illustrated very well an important point in the practice of electro-therapy, namely, that one could not always decide positively as to what cases were suitable for this treatment. He had had two patients who were apparently suffering from fibroids of the uterus and were believed to be eminently fit subjects for treatment by electricity. Indeed, he was about to send one of the patients to some one who was familiar with Apostoli's method, but finally decided to perform laparotomy, although the symptoms hardly justified this operation, they being those of pressure with moderate hemorrhage. The operations were performed, and in one case there was a cancer of the ovary. To have delayed much longer while trying palliative treatment would certainly have been very bad for the patient. In the other case, before he decided to send her for electrical treatment, subacute peritonitis developed, and he subsequently operated and removed two large tubes distended with pus, and ovarian cysts the size of lemons. Thus it would appear that one might sometimes go on using electricity where laparotomy was called for. In the case of pyo-salpinx it would have been very possible by the use of electricity to set up a fresh inflammation. It was evident that a very exact diagnosis should be made before using this agent, and also that it should be borne in mind that disease of the appendages was a frequent accompaniment of uterine fibroids.

DR. E. L. H. MCGINNIS inquired of Dr. Coe whether there was hemorrhage.

DR. COE replied that there was only moderate hemorrhage; the tumor in the first case was supposed to be a subperitoneal fibroma which had become impacted in the pelvis.

DR. A. P. DUDLEY asked Dr. Goelet whether he felt quite sure that the electricity did not cause the hemorrhage to take place into the tumor.

DR. GOELET replied that he did not think it possible. The electricity was employed the last time two weeks before the operation. All the electric applications were borne well, and there was no after-suffering. At the last one the patient called his attention to the condition of the tumor, saying it was softer and seemed smaller. Measurement showed an inch and a half decrease in the waist measure. Noticing that the tumor was much softer, and believing that he detected fluctuation, Dr. Goelet made an application of only fifty or sixty milliamperes, having already decided to operate. This applica-

tion was borne well, and the patient returned to her home. Twelve hours afterwards, after ascending several flights of stairs, she was taken with a chill and considerable prostration followed. Probably some hemorrhage occurred then. From that time until the operation was performed there was some elevation of temperature.

DR. COE thought the gross appearance of the specimen pointed to one of those rare cases of fibro-cyst of the ovary.¹

DR. EGBERT H. GRANDIN read the paper of the evening, bearing this title:

A PROBABLE CASE OF INTERSTITIAL PREGNANCY (WITH SPECIMEN).²

DR. H. C. COE thought that the evidence given was hardly sufficient to base upon it a diagnosis of that rare condition, interstitial pregnancy. It was not an uncommon experience to curette the uterine cavity where pregnancy was not suspected, and to fail to produce abortion at once. He remembered one case in which he inadvertently curetted the uterus with the sharp curette and amputated the cervix, pregnancy not being suspected. The patient had no symptoms until after several days had elapsed, when she passed a fetus about six weeks old. In another case he was unsuccessful in his attempts to induce labor, having dilated the uterus and used the curette thoroughly. The uterine cavity appeared to be empty. The fetus in that instance seemed to have been in a cavity by itself, probably in one horn of the uterus, and was not passed until two days afterward. In another instance, in which he assisted Dr. Shrady, the patient was five months pregnant when she aborted, and the placenta was supposed to have been passed at the time. Four or five months afterward the patient was sent to the Cancer Hospital to be treated for malignant disease, for she had recently been having a profuse watery discharge with hemorrhage. It proved that the placenta had been left, and presumably was hidden in a cavity by itself, as was shown by digital exploration. It was so firmly adherent to the uterine wall that it required the use of the curette and cutting forceps for its removal; nor was it completely removed, the patient's condition being so critical that they were obliged to desist.

These facts showed that it was not impossible for both placenta and fetus to be retained in one horn of the uterus, or to be so encapsulated as to escape the curette. He thought Dr. Grandin's last supposition was the more probable, namely, that the case was one of uterus biseptus—that was to say, if the

¹ Microscopical examination proved it to be fibro-cystic.

² See original article, page 56.

fetus was really in a distinct cavity which was apparently shut off from the main one. At any rate, he thought more positive evidence was called for to justify the diagnosis of interstitial pregnancy.

DR. W. GILL WYLIE said he had always believed it exceedingly difficult to make a diagnosis of extra-uterine pregnancy, yet experience had taught him that where there was a tumor on one side of the uterus, and the subjective symptoms of extra-uterine pregnancy, after the second month, were present, the diagnosis could be made with reasonable certainty, and the safest thing which could be done for the patient would be to perform laparotomy. This could be done by an expert at a risk of not more than one death in two or three hundred cases. The very fact of difficulty in making the diagnosis was just the reason why he advocated laparotomy. After laparotomy the diagnosis would be cleared up. If electricity were used the sac might rupture, and laparotomy performed after this accident was much more dangerous to life than if done before. Cases were constantly coming under his care for operation in which some physician had erroneously diagnosticated extra-uterine pregnancy. When the fetus was not over three months old the diagnosis previously made had almost invariably been incorrect. Three such cases had come under his observation within the last month. In one the fetus proved to be intra-uterine; in another there was a malignant tumor of the vermiform appendix, yet the history was a very good one for extra-uterine pregnancy, and the gentleman who made this diagnosis stood high in the profession. The mistake was only cleared up by an exploratory incision.

He asked Dr. Grandin whether this was the woman's first child, and received the reply that she had had five children. He also inquired what kind of curette was used; to which Dr. Grandin replied, a sharp steel, partly flexible curette, oval in shape.

Dr. Wylie added that he took much the same view of the case which Dr. Coe held, namely, that it was one of ordinary pregnancy in the beginning, the fetus being attached, as was not infrequently the case, to a small space on a large uterus, this space becoming softened and distending with the growth of the mass, while the remainder of the uterus remained almost distinct from it. Such were the cases in which he had frequently found the diagnosis of extra-uterine pregnancy made by men who had previously seen the patient. He was, therefore, inclined to think the whole mass was within the uterus, probably, however, somewhat separated from the general cavity. Dr. Coe, he said, was perfectly right in stating that any one who should curette the uterus without exploring it with the finger was liable to pass over such a sub-

stance and not notice it. It was very easy in curetting the uterus, which was a movable body and, under certain conditions, having portions of its walls softened, to overlook the true nature of the case. He now made it a rule never to curette, when the uterus was at all enlarged, without inserting a pair of forceps, which enabled him to pick up things which the curette might pass over. It was only a few days since he curetted a woman whom a physician thought to be two months pregnant, and on passing the forceps he was able to catch three or four fibroid tumors which, in rolling about, had escaped the curette. He thought one could not have fairly inferred from the history contained in the paper that this was a case of extra-uterine pregnancy.

DR. R. A. MURRAY thought the author had made his case out very clearly one of interstitial pregnancy. He had examined the patient carefully before the curetting, and had not been able to make out a tumor at the side of the uterus nor in the tube. He then curetted, but did not obtain any evidence of disease. Later, when the fetus had passed, he introduced his finger and found the placenta in a cavity where the fetus had lain. He had his finger actually within the cavity. We must acknowledge that there could be interstitial pregnancy, and that it might occur at the intra-uterine end of the tube or near the tubal ending. When it occurred in this locality it generally ruptured near the third month either into the cavity of the peritoneum or into the broad ligament. But if in this case, after going on to the size indicated by the fetal remains presented, rupture had taken place into the broad ligament, there certainly would have been a tumor at the side of the uterus. If it had formed at the tubal end it would have caused a very asymmetrical uterus, which, however, was not made out, although the patient was examined under an anesthetic. He thought we were carrying scepticism too far in supposing that the reader, who had his finger in the uterine cavity, could not determine whether it was a uterus bicornis or biseptus. If it had been a uterus bicornis the discharge of the fetus into the cavity would not have taken place in the way it did. The uterus bicornis was nearly always ruptured. In the case of the uterus biseptus, the septum extended so far down as to be easily determined when an examination was made under an anesthetic. While, therefore, we might be inclined to conjecture on these points, the examination left us with positive facts. Moreover, the patient was examined, not alone by Dr. Grandin, but also by the gentleman who sent her to him. We had, then, to accept facts and not argue on suppositions.

That all tubal pregnancies ruptured was not true. There were cases in which the fetus had descended into the uterus

or to the uterine end of the tube, and gone on to develop as in normal pregnancy, yet constituting an interstitial pregnancy.

DR. GEORGE E. ABBOTT asked Dr. Grandin whether the curetting was not such that if the fetus had been in the uterine cavity, not separated from it by a wall, the placenta or fetus would have shown the marks of the instrument.

DR. GRANDIN replied that the fetus was under the inspection of the members, and there were absolutely no markings upon it; therefore, notwithstanding the thorough use of the sharp curette, he could not have touched it. It should be remembered that he was curetting the patient to cure; his reputation was at stake, for she had already been under treatment by others who had failed. He went over every nook and corner, thoroughly scraping with the sharp curette, and it seemed impossible that the fetus could have been anywhere in the cavity of the womb and have escaped injury.

DR. A. P. DUDLEY inquired whether the uterine cavity was oval where the fetus lay.

DR. GRANDIN replied that it was not; that the patient was examined under chloroform, and the uterus was found on all sides as symmetrical as a heavy subinvolted uterus ordinarily is. This examination, however, was made over six months after the probable date of fetal death.

DR. BUCKMASTER asked whether the abdominal walls were thin, permitting of a thorough bimanual examination.

DR. H. J. BOLDT inquired of Dr. Wylie whether he really meant that one should not lose more than one patient out of two or three hundred cases operated upon for extra-uterine pregnancy.

DR. WYLIE replied that he certainly did; that laparotomy for simple, unruptured, non-adherent extra-uterine pregnancy should not give a death rate of more than one in two or three hundred cases. Taking a hundred miscellaneous laparotomy cases, excluding nothing, and including a number of hysterectomies, he had reduced the death rate to one per cent.

DR. BOLDT said that such statistics—one death in two or three hundred laparatomies for unruptured extra-uterine pregnancy—had never been reached, and he doubted whether they ever would be. In the first place, no one man ever had two or three hundred cases of primary laparotomy for ectopic pregnancy, and the statistics by different operators would show a higher mortality.

DR. BUCKMASTER wished to say that if the reader of the paper should answer the question which he had propounded in the affirmative, he must believe in the correctness of his diagnosis, so far as it was possible to make a positive diagnosis in a case of this kind. We had to accept facts even though

they opposed theory, and Dr. Grandin's case would go to show that a certain one of Mr. Tait's statements stood on no better basis than a good many others.

DR. DUDLEY thought that in his experience he had met with two cases giving very much the history of Dr. Grandin's—cases in which the indications from physical examination were that the fetus was not within the uterus, yet as time lapsed the fetus developed, made its way into the uterus, and was delivered properly. The case related in the paper was one in which we might argue all night and not get nearer the exact facts than we were at present. There was something which under the circumstances we could not explain. The woman, as he understood the history, was nursing at the time she was supposed to have conceived; in that event he could not be positive as to the date of conception. If she had a hemorrhage, she might still be pregnant and have the hemorrhage, or she might have the hemorrhage and not be pregnant.

He had seen cases in which impregnation had taken place high up in the horn of the uterus, a portion being in the tube and a portion in the uterus. But such cases presented an entirely different condition to the touch; they should not be classed with cases of extra-uterine pregnancy and an operation be immediately recommended. That, he said, was the only part of the paper to which he would take exception—that in which reference was made to the energy which some of them displayed in subjecting cases of extra-uterine pregnancy to laparotomy. If they made a diagnosis of extra-uterine pregnancy, they made it much clearer than had been done in the paper. The indications, the symptoms, were entirely different. He certainly would not recommend laparotomy for such a case as had been described in the paper, for the uterus, as had been said, was symmetrical; the growth had not been outside of the organ. The author did not curette because of an extra-uterine pregnancy, although he had some history of that condition, and he believed that, even though the diagnosis had been very clearly drawn, there was still some doubt whether there was not a pregnancy in one horn of the uterus, pretty high up, around which some plastic thickening had taken place sufficient to protect the fetus from the curette. He had himself, in going over the surface of the uterus with the curette, failed to get the object sought for until he introduced the forceps. He was, therefore, inclined to think the case was one of pregnancy in which a portion of the fetus was within the tube and a portion within the uterus, encapsulated, and not truly interstitial. Surely he would not recommend laparotomy for any such condition, for the fetus would, without interference, find its way into the uterus.

DR. CLEMENT CLEVELAND thought the author had stated his case very clearly, and he would favor the opinion that it was a case of interstitial pregnancy; but he rose to speak to another point. In speaking of laparotomy for extra-uterine pregnancy, it should be remembered that there was a difference between ectopic gestation and extra-uterine pregnancy. He believed, as Dr. Dudley had just stated, that no one, however ready he might be to perform laparotomy, would have done this operation in a case like the one Dr. Grandin had related. A case of ectopic gestation might recover because interstitial, but extra-uterine pregnancy meant pregnancy outside of the uterus. This brought him to the question of laparotomy in such cases when the pregnancy had not existed longer than three months. He thought, as Dr. Wylie had stated, that the operation was as easily performed as for an adherent tube, but he did not himself believe that it was warranted the first three months, for we had without it an effectual means of destroying the fetus. There were already a number of cases on record in which the fetus had been killed by electricity, and he thought it was one's duty to try this agent before resorting to so serious a measure as laparotomy.

DR. MALCOLM McLEAN had been impressed by the fact, while listening to the case and the discussion thereon, that we would have to lay aside to a great extent all theorizing and accept the dexterity of the examiner and reporter as the most reliable testimony. It seemed to him that a man who had had Dr. Grandin's experience in examining case after case in obstetrics could, after relaxing the uterine neck and introducing the finger, certainly determine whether the placenta or any other portion of the ovum was contained within the normal uterine cavity, or whether it was within some adventitious sac. He therefore accepted the author's description of the case as one of so-called interstitial pregnancy, and upon his testimony would so classify it. He would, however, want to know the man who reported such a case; he did know Dr. Grandin's ability to be beyond question. The evidence of his fingers was worth more than all the theory which the able speakers could advance. He remembered one case in which more than one person of considerable skill diagnosticated extra-uterine pregnancy, yet it terminated as a case of normal pregnancy. In that case, however, the uterus was asymmetrical, while in Dr. Grandin's it was symmetrical.

DR. WYLIE and DR. DUDLEY asked Dr. Grandin whether he would expect to find the uterus symmetrical if the case were one of interstitial pregnancy.

DR. W. M. POLK would say a word in regard to the use of electricity in extra-uterine pregnancy. Judging by his own

observation, he thought we had every right to be extremely sceptical of reported cases of extra-uterine pregnancy up to the third month—yes, extremely sceptical. He said that for the reason that all knew perfectly well how difficult it was up to the second month to make a diagnosis of pregnancy, even when it had taken place within the uterus, and much more when it was without. When one took into consideration the many conditions alongside the uterus which under the most favorable circumstances it was sometimes difficult to differentiate, it seemed to him we had been too ready to accept so-called cases of extra-uterine pregnancy cured by electricity. While there were cases recorded by men whose personal skill placed the diagnosis beyond doubt, yet if these were accepted and all others were excluded it seemed to him the cases were too few on which to base a rule that electricity was the only remedy for cases during the early months. He felt that the electrical treatment was yet under consideration. It had not proved its entire case. That was the only point to which he wished to speak, and he remarked upon it only because there seemed to be a tendency among the profession at large to believe that in the class of cases named electricity was the only proper treatment, while operative treatment was decried. This was all the more important, for when operative treatment was resorted to it might be unjustly criticised, the criticism bearing rather hard upon conscientious workers. For his own part, he would like to see better-supported statements with regard to the curative action of electricity before abandoning an operation as the proper procedure.

DR. A. M. JACOBUS wished to ask Dr. Polk a question which occurred to him every time he heard this subject discussed: Why was it that the strictly operative surgeon (or laparatomist) always insisted that he could make a better diagnosis in the class of cases under discussion than the one who used electricity? The strictly operative surgeon always spoke as though he could make a diagnosis which would warrant him in performing laparotomy, while, at the same time, insisting that the surgeon who used electricity in certain early cases never could make a diagnosis worthy of credence, and particularly if the patient happened to be cured—that is, if there were a disappearance of the local and general symptoms after the use of electricity.

DR. POLK.—On the contrary, I did not mean to say that we were infallible, for one moment. The infallibility, it occurred to me, was rather upon the other side, and it was only to protest against that claim of infallibility which induced me to speak. I confess our inability to make an exact diagnosis in all these cases. But taking into consideration the dangers which belong to a well-recognized case of extra-uterine preg-

nancy, we believe that those dangers become less in our hands than in the hands of the electricians. That is all. But when it comes to a claim of absolute certainty, we bow to you!

DR. CLEVELAND said Dr. Polk's remarks called to mind a point which he had intended to mention before. It was that electricity could bring to its aid the reports on pathology. A good many cases had been discovered post mortem of death of an extra-uterine fetus in the early months. That went to show that the fetus could die during the early months spontaneously, and he thought there could be no question but what electricity might bring about its death.

DR. POLK, referring to Dr. Cleveland's remark, did not wish to be understood as saying that the electrician was the only man who had gone astray in diagnosis. He believed that nine-tenths of the gentlemen who were operating on cases of so-called extra-uterine pregnancy were reporting nothing but cases of hemato-salpinx as cases of extra-uterine pregnancy. Therefore he never accepted a case as one of real extra-uterine pregnancy unless it was stated positively that the fetal structure was recognized by the unaided eye or the microscope. Unless that statement accompanied the history, all so-called cases of extra-uterine pregnancy should be stricken from the records.

DR. WYLIE wished not to be misunderstood. He must confess that he had never made a positive diagnosis of extra-uterine pregnancy before operating. Dr. A. M. Jacobus had made the diagnosis in one case, and he (Dr. Wylie) operated; and Dr. J. R. Conway made the diagnosis in a case he had operated upon a few days ago. Both cases recovered. But of all his cases, probably fifty or sixty in number, in only those two were the symptoms so plain that one could make a positive diagnosis. Many times he thought he could find the extra-uterine fetus, but could not; while in not fewer than four cases in which he did not expect to find it, it was discovered. He could only say that if a tumor were found at the side of the uterus of about the size of one's fist, which was increasing in dimensions, no matter whether he should think it an extra-uterine fetus or a cyst, he would consider that the safest thing to do would be to open the belly. If the tumor proved to be an extra-uterine pregnancy, remove it; if an ovarian cyst or a hematoma, do likewise. It was the simplest and safest thing to do. He thought no one could expect to make a diagnosis of extra-uterine pregnancy, except in rare cases.

DR. GOELET inquired how many cases of extra-uterine pregnancy treated by electricity had proved fatal. He made the inquiry because the question had been raised whether it was safe to use electricity. He did not know of a death which

could be attributed to it. Therefore it could not be argued that it was more dangerous than the knife.

DR. MCGINNIS had treated but a small number of cases by electricity, three in all; in none of them had there been an untoward accident. The discussion having turned on the relative safety of the two methods of treatment, he hoped the statistics would be given.

DR. A. M. JACOBUS said he had had a case very much like the one related in the paper. About a year and a half ago he was called hastily to see a patient whom he had confined twice previously, the messenger stating that she was dying. He found that she had had a profuse uterine hemorrhage with severe labor pains, and the flow still continued. The patient stated that she had been pregnant about two months, and had just miscarried, and that the fetus was supposed to have passed, but that it could not be found. He introduced his fingers into the uterus and removed what he could of the secundines, and also curetted thoroughly. He had examined and treated the patient many times previously, for she had had extensive peri-uterine adhesions and thickening, and he was therefore familiar with her local condition. He found quite a mass projecting from the right side of the uterus, which he supposed was one of the old exudates which he had noted on previous examinations. He was positive that he went over every part of the cavity of the uterus and emptied it thoroughly with his fingers and the curette, but the mass in the region of the right broad ligament remained, and the patient complained of great pain there. As she still had a slight flow, he gave her a dose of ergot and left directions to have it repeated. Thinking that the colicky pain complained of was uterine, he told her to apply a mustard poultice over the seat of the pain. In about an hour after leaving, the patient had a very sharp, labor-like pain, expelled some fluid and clotted blood, etc., and again sent for him. On his arrival he found among the clots a fetus about the size of his little finger, which had evidently been in the right tube near the uterus; for, after again examining her, he found that the mass previously referred to had entirely disappeared. He believed, therefore, that it was a case similar to Dr. Grandin's.

DR. COE asked Dr. Grandin whether he believed that he removed the product of conception from the tube, or from the horn of the uterus after it had been discharged from the tube; and whether the flattened, gingerbread appearance of the fetus would not seem to show that it had been pressed against a broad surface, like the uterine wall, and not confined in a narrow cavity, such as would be formed in one horn.

The PRESIDENT wished to say that he was fully in accord with the remarks made by Dr. Polk, that the great majority

of cases reported as cases of extra-uterine pregnancy which had been operated upon were simply cases of hemato-salpinx, and he would so class them unless examination showed the presence of the fetus or other good evidence of fetation having existed. He had seen a number of such cases during the last two or three years, in which, without a microscopical examination having been made, gentlemen gave a diagnosis of extra-uterine pregnancy. In the speaker's opinion they were simply cases of hemato-salpinx, and he believed a proper examination would have proven them to be so.

With regard to the propriety of performing primary laparotomy in tubal pregnancy, he had expressed his views so often and so fully during the past five years, he would say nothing more at present than that, given the symptoms of tubal fetation, which he had more than once before classified, he would certainly perform primary laparotomy. He would rather do this than trust to electricity in any form.

DR. GRANDIN said that when he presented the specimen he did not suppose it would lead to the discussion of that worn-out subject of treating extra-uterine pregnancy by electricity—a subject which had been discussed in the Society for years, and which apparently was not yet settled.

He would admit that it was very easy to sit at a meeting and theorize about a given case, but he thought all would admit that the man who could best theorize was he who had had his fingers in the uterus in the case under discussion. He thought certain ones of his critics had not been as kind to him as he had been to them. He had disclaimed dogmatism; they had dogmatized. They had told him emphatically that the fetus and the placenta were in the uterine cavity. He would answer then, most emphatically, that he removed the placenta from a hole in the muscular substance of the uterus. Who was to decide between them? Furthermore, one of the gentlemen had said that he had often, when curetting the uterus with the sharp curette, run over more or less membrane. But there was a great difference between the fetus presented and membrane. His curette certainly did not strike that thing (the fetus)—he was sure of that. It was many times larger than membrane, and besides it showed absolutely no markings by the curette.

Was the uterus symmetrical? Yes, *at the time he saw it*, which was six months after fetal death; and he would expect it then to be symmetrical, just as he had found the uterus containing a fibroid of this size, symmetrical.

With regard to Dr. Dudley's statement, that he thought no one would have operated in this case for extra-uterine pregnancy, the speaker would submit that there were gentlemen in the Society, and they were on record in the Transactions of

the Society, who, given a history of amenorrhea, spasmodic colicky abdominal pains, irregular discharges, and the passage of a membrane, would have counselled laparotomy. Such was the history of this case six months before he had seen it. Those symptoms had led some gentlemen of the Society to open the belly, where they found uterine pregnancy. That was why some, in view of the difficulty of making a diagnosis of extra-uterine pregnancy, thought it better, in the absence of symptoms of rupture, to use electricity. To answer Dr. McGinnis' question, there was not a case on record, at the time Dr. Brothers wrote his paper, in which electricity had caused the death of the woman. There were a few cases, on the other hand, in which primary laparotomy for supposed, and even for assured, extra-uterine pregnancy had killed the woman.

The gentlemen who had kindly dogmatized and stated that in his case the fetus was within the uterine cavity, seemed to have overlooked the fact that early in the history there was a history of ectopic gestation, amenorrhea, colicky pain, hemorrhage, and the passage of what might be termed a decidua; and they seemed to have further forgotten that he had found a hole in the muscular substance of the uterus. He might add that his practice was largely obstetrical; that he had examined many uteri, taken out many placentæ; and he could assure his hearers that he had never found a placenta in the uterine cavity as it was in this patient's case. It was not in the uterine cavity, but in a hole within the muscular substance.

He had been asked if he removed the fetus. He did not; he found it in a clot. He looked at all the clots, and if the fetus had been compressed in a laminated clot he would have so found it. The fetus suggested to him something which had been in a hole. Some of the scrapings from the uterine cavity were presented, and they looked to him as though they contained muscular fibre, which would indicate that the uterine walls had been involved in some way. They would be examined under the microscope.

There was no proof whatever that he had had to deal with a bicornate uterus; if so, he would have made out the horn, since he had repeatedly examined the patient. The same remark would apply to the uterus biseptus.

The speaker thought that the history of the case warranted him in stating that it might have been a case of interstitial pregnancy (he would not say dogmatically that it was); if such was its nature, then another of Mr. Tait's assertions was sent where it belonged. That gentleman had asserted dogmatically that every case of interstitial pregnancy must rupture into the peritoneal cavity; yet Dr. Mundé, also Dr. Garrigues, and perhaps others, had reported cases of interstitial

pregnancy in which rupture took place, not into the peritoneal cavity, but into the uterus. He offered this as still another case.

DR. POLK wished to have one point made clear. He had understood the reader of the paper to say that he believed there were gentlemen in this Society who, if they had had this case that presented the spasmodic pain and the intermittent hemorrhages, and upon examination they found a symmetrical uterus, that they would have performed laparotomy for extra-uterine pregnancy. He did not know that he was correct in understanding the author to say, finding a symmetrical uterus. That was the only point. But, as he understood it, he found a symmetrical uterus.

DR. GRANDIN said, not finding a symmetrical uterus, for the reason that no one was in a position to say that the uterus was symmetrical in February, when the general symptoms of extra-uterine pregnancy were present.

DR. POLK understood the doctor to make the statement that there were gentlemen in this Society who would make it a rule to open the belly in all such cases.

DR. GRANDIN said, to judge by statements appearing in the Transactions of this Society.

DR. POLK said the reputation of this Society was at stake. Such a statement was hardly complete unless the doctor added that there were either incompetent or dishonest members in the Society; therefore he would have that point distinct. In other words, any man coming to a case and finding a symmetrical uterus, pain, hemorrhages, and should open the abdomen, would be one or the other of those two things. If there were members of the Society doing this, let us know it and expel them.

DR. GRANDIN said he would not use those terms. He simply put himself on record as saying that the statement had been made that, given the general symptoms of extra-uterine pregnancy, given the suspicion of extra-uterine pregnancy—because we could not have absolute certainty—the proper thing to do was to open the abdomen, to do primary laparotomy; and he then protested against such a statement, and protested still. That was, to the best of his recollection and belief, the foundation for his statement that had certain members of this Society seen this case in February, when, with amenorrhea, she complained of colicky pain in the abdomen, irregular hemorrhages, and a possible decidua, he believed that, unless those gentlemen had since gone back on their record, they would have felt themselves justified in opening the abdomen.

DR. POLK wished to add that he thought such a statement would be incomplete unless the opinion were further expressed

that such a man was incompetent or dishonest. That, he thought, was the ground which this Society wished to stand on.

DR. CLEVELAND said he was present at that meeting, and he got no such impression as Dr. Grandin had given—that, given the subjective symptoms of extra-uterine pregnancy or ectopic gestation, these gentlemen would perform laparotomy. He got the impression that if, with the symptoms of extra-uterine pregnancy, they also found the physical signs (a mass at the side of the uterus), then they would do laparotomy; but certainly not in such a case as Dr. Grandin had related to-night. He would certainly feel as Dr. Polk did, that we were giving a very bad impression to the profession at large in allowing such a statement to go out undisputed.

DR. GRANDIN did not wish anything which he had said to be considered as the expression of the views of any other member of the Society. The records, he presumed, would show what had been stated. If Dr. Cleveland was right and he was wrong, or the reverse, the record would absolve either the one or the other. But how was it, he would ask, that uterine pregnancy was found when the abdomen was opened in some instances? There had been the classical signs of ectopic gestation, presumably, or the men would not have operated for ectopic gestation; and yet there existed no tumor at one side or behind the uterus, but there was a gravid uterus. He mentioned no names, and he rejected Dr. Polk's suggestion that he call these men either incompetent or dishonest.

DR. WYLIE wished to say a word. He had been considered by some as being in favor of operating, and in fact he did operate a good deal, and it would seem that in the opinion of a good many men in New York he had acquired rather a bad reputation as a laparatomist. This, he thought, was simply due to the fact that he had early happened to take up the subject of laparotomy, and that these men did not know the facts on which they based their opinion. He did not think it was fair for the reader of the paper to allude to unpublished or private cases in which a mistake had been made in diagnosis. He would admit with Dr. Polk that any man who would open the belly in such a case as the author had related would be incompetent or dishonest, but probably incompetent, for if he were dishonest he would know better.

DR. BUCKMASTER called attention again to his question, which he thought an important one, as to the thickness of the abdominal walls. In some cases with fat, thick walls, it was very difficult to map out the uterus.

DR. GRANDIN said the patient was a very stout woman. He only wished to add that Dr. Wylie was not connected with the cases which he had in mind.

DR. A. S. HUNTER called attention to the fact that the members were out of order in speaking after the reader of the paper had been asked to close the discussion.

The PRESIDENT admitted the point of order, but wished himself to add that he thought Dr. Grandin would conform to the wishes of the members of the Society, if he would produce the records, on which he based his remarks, at a future meeting. He thought himself that Dr. Grandin was entirely mistaken, and that Dr. Cleveland's statement was the correct one, namely, that the gentlemen who made the remarks at that meeting said they would operate provided certain symptoms were present and they found a mass on either side of the uterus which they took to be an extra-uterine pregnancy.

DR. GRANDIN said he accepted the President's ruling, and that if he did not find in the past records what he expected to find, he would not hesitate to retract his statements.¹

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, September 26th, 1890.

The President, JAMES H. ETHERIDGE, in the Chair.

DR. HENRY BANGA read a paper

ON ECTOPIC PREGNANCY, WITH REPORT OF TWO CASES.²

DR. C. T. PARKES.—I have been very much interested in these cases as presented by Dr. Banga. I certainly was in favor of the opinion that all cases of extra-uterine pregnancy should pass into the hands of the laparatomist for treatment; but in looking up the cases I have had under my charge, somewhat to my surprise I came across two which were not treated by operative procedure, and which recovered. I have had seven cases under my charge, which I think were all cases of ruptured extra-uterine pregnancy, with the exception of the last one, which went on to the full term and three months beyond full term; she came under my care with a dead fetus and well-

¹ The corrections to Dr. Grandin's remarks are based on statements made by him and on proof offered at the succeeding meeting of the Society, November 4th. Vide Transactions of that date.

² See original article, page 33.

marked symptoms of septic poisoning. The first two cases came to me some years ago, and in looking over my notes of these cases I am confirmed in the supposition I had then, that they were cases of extra-uterine pregnancy. This supposition was mainly based upon the symptoms mentioned by Professor Banga as indicative of that condition, namely: 1. Acute and severe pain in the pelvis; 2. The usual symptoms of great loss of blood; 3. A previous history of several or many years of sterility; 4. Interruption of previously regular menstruation; 5. Enlargement of the uterus; 6. The presence of a tumor circumscribed in character, to be determined on one side or the other of the uterus if examined before rupture; if after rupture, the discovery of a large mass, doughy and inelastic, in the pelvis and lower abdomen; 7. The presence of a bloody vaginal discharge.

With this array of symptoms it seems hardly possible that the condition can be mistaken, and yet in contradistinction to that we must bear in mind the testimony of a man who has perhaps seen the greatest number of these cases—Mr. Tait. He says he has never seen a case of extra-uterine pregnancy before rupture; that every case that has come to him—thirty-seven in all—has been a case of rupture. So I must object a little to the idea that it is an easy thing to recognize the presence of extra-uterine pregnancy. Thirty-seven cases occurring in the practice of one man would rather indicate that physicians, as a rule, are able to recognize the condition only in its history, or are not aware of the value of these symptoms in all cases. In the first two cases I referred to, one presented all the symptoms that I have passed in review and which were previously mentioned by Professor Banga; but she was not operated upon, because at that time I do not think much operating was done for these cases. She was treated for what was supposed to be a hematocele, and she went on in great danger for days and weeks, until I finally aspirated through the abdominal wall and withdrew a large amount of bloody fluid. I aspirated three or four times and she finally got well. The second case presented all these symptoms, and I would now without hesitation advise operation, as a case of extra-uterine pregnancy. In this case an opening was made through the vagina and the extravasated blood and remnants drawn away, and the patient recovered.

These are two cases of recovery in which laparotomy was not done. The cases out of the seven presenting symptoms of ruptured tubal pregnancy, in which laparotomy was done followed by recovery, I have already presented to this Society. The sixth case was a lithopedion, which I removed and reported the case and exhibited the specimen to this Society. The seventh and last case was that of a lady who went three

months beyond full term with an extra-uterine pregnancy and was taken with septic symptoms. I operated upon her and removed the entire sac and contents together. This case again proved what Mr. Tait says is so necessary to believe in these cases as a rule—that they are always outside of the peritoneum—and which is proven also by the frozen section described so beautifully by Mr. Hart. All the organs inside the peritoneum are shoved to one side and the pregnancy is outside, hence the method of treatment of the latter period of extra-uterine pregnancy. The going to full term is a matter of grave consideration and should be well understood. The method spoken of by Dr. Banga has been the one usually adopted—that is, opening down into the sac, sewing it to the wound of the abdominal walls, removing the fetus, and then packing the cavity with antiseptic gauze. Most of these cases, previous to antiseptic days, died of septic peritonitis. Since antiseptic precautions have been adopted there has been a decided improvement in the death rate. The method of treating the placenta is an item of great importance in such cases—that is, whether it should be left or removed. Lately an article from the pen of Dr. Braun has appeared in the *Arch. für Gyn.*, in which he reports two cases. In the first he opened the sac, sewed it to the abdominal wall, removed the child, and then tried to ligate the vessels of the placenta inside the sac and remove the placenta. The patient died from loss of blood. In the second case he opened and sewed the sac to the abdominal walls, but ligated the vessels outside the sac by means of stitch ligation, and removed the placenta with no loss of blood. The patient recovered. I think where the pregnancy has gone to full term it is not best to wait until there is loss of blood from separation of placenta and inability to control it, but to follow the suggestion of Dr. Braun and primarily ligate the vessels outside of the sac, as can be done by means of a needle and ligature, then remove the placenta and pack the cavity with gauze dressing. That seems the safest way.

This is an important subject, and I certainly think the doctor's first patient was very fortunate in many ways, especially in that she fell into such skilful and efficient hands, with gentlemen who were familiar with such cases and able to recognize them early; because I believe, as a rule, it is a condition not easy to recognize. And she was still more fortunate in that she had the confidence a patient should have in the attending physician, and consented to an early operation. One cannot help for a moment agreeing that it is better to do laparotomy before than after rupture.

DR. W. W. JAGGARD.—I have listened to the reading of Dr. Banga's paper with great interest. I wish to restrict my remarks to early tubal pregnancy, before and after rupture.

In the diagnosis of Dr. Banga's first case there were two signs of pregnancy present that I do not remember having heard the essayist mention. One was the blue discoloration of the anterior vaginal wall, which was more marked in this case than I am accustomed to see it, even in normal pregnancy. Chadwick, in a very excellent paper read before the American Gynecological Society several years ago, called attention to the diagnostic significance of the blue discoloration of the anterior vaginal wall below the meatus urinarius. The second point was Hegar's sign—the softening and compressibility of the lower uterine segment; compressed between the hand on the abdomen and the finger in the vagina, the lower uterine segment felt as thin as cardboard. A few days since, in conversation with Dr. Gehrung, of St. Louis, he narrated a case in which the lower uterine segment was so thin and compressible that five prominent physicians of St. Louis diagnosed the case to be one of tubal pregnancy: it turned out to be a case of normal pregnancy. What was supposed to be the uterus was merely the vaginal portion; the lump in the abdomen, the corpus uteri, was separated by a long isthmus from the compressible lower uterine segment.

The only condition that closely resembles early tubal pregnancy, in my experience, is pregnancy in a retroflexed uterus. During the last summer I saw a case (which a member of this Society had examined very carefully bimanually), and found the vaginal portion of the cervix very much elongated, the lower uterine segment very thin and compressible, so much so that one would not notice it at all unless attention was called to it; behind the vaginal portion, a tumor. The woman had pain, slight hemorrhage, bearing down, and a discharge of something that was mistaken for decidua. Under the genu-pectoral position for a week, the nature of the tumor was disclosed: it was a case of pregnancy in a retroflexed uterus. The woman is now in her eighth month and expects to be confined soon.

In justice to the gentleman who first examined, it must be said that careful examination under an anesthetic would have disclosed at once the nature of this retro-uterine tumor. He did not make a positive diagnosis, but begged for an examination under an anesthetic, which was declined; and the patient came under the observation of Dr. Webster, of Evanston, and myself. As a general rule, when the conditions for bimanual palpation are favorable—that is, when the abdominal walls are thin and relaxed, particularly when the patient can be anesthetized—I do not think there is much difficulty in the diagnosis of tubal pregnancy before rupture. Moreover, I think there are usually present symptoms enough to attract the

woman's attention to her condition and lead her to apply to a physician before rupture takes place.

I wish to congratulate Dr. Banga on his diagnostic skill in this case. It is certainly the first case in Chicago operated upon at so early a date and before rupture of the sac.

As regards treatment of tubal pregnancy before rupture, I think the weight of evidence and of responsible opinion is in favor of laparotomy with extirpation of the sac. It is true that feticide by means of electricity is defended, more particularly in the Eastern United States. I do not think this practice can be upheld on rational grounds or upon the results that have followed the use of this method. The one individual to whom honor is due for establishing laparotomy before rupture is J. Veit, of Berlin, who has operated successfully on some seven cases.

The universal proposition that laparotomy should be performed in every case of ruptured tubal pregnancy cannot be accepted at the present day. The natural history of tubal pregnancy shows that in the majority of cases recovery results; there are five favorable terminations to one unfavorable. In the first place, the tube may rupture into the broad ligament, and we have the formation of a hematoma or a broad-ligament pregnancy, both relatively favorable terminations for the time being. Sometimes the tube ruptures and the egg remains *in situ*, acting as a tampon—also a favorable termination. Then we have the tube rupturing, and the product of conception, and blood, forming a retro-uterine hematocele—a relatively favorable termination not demanding a primary laparotomy. I think the essayist goes a little too far when he says all retro-uterine hematoceles are the result of tubal pregnancy. That view was advanced years ago by Dr. Galliard, but it has been sifted down to about 75 per cent due to ruptured tubal pregnancy. Finally we have the tube ruptured, with free intraperitoneal hemorrhage, the woman dying either of primary hemorrhage or from secondary peritonitis. There is only one among all these terminations that is unfavorable, and I think, therefore, it is not right to say perform laparotomy in every case of ruptured tubal gestation. Perform laparotomy when there are signs of free intraperitoneal hemorrhage, when there is evidence that peritonitis will likely ensue. It must be borne in mind that in case of rupture before the third month the ovum is sterile and all its surroundings are commonly sterile, and in some cases, even, of intraperitoneal hemorrhage the blood and fetus will be dissolved.

DR. D. T. NELSON.—The subject has been so freely discussed that it is hardly worth while for me to take the time to discuss it more, especially as I can hardly differ from the expressions already made. However, I will refer to one case

which I saw five or six years ago. This case was just beyond term, or perhaps exactly at term—it was difficult to determine the exact date of the pregnancy. But she had had a kind of false labor, thought herself in labor, sent for a physician, who found there was some difficulty in a normal delivery and suspected extra-uterine fetation. The following day I saw the patient in consultation; there could be no question but that the woman was pregnant, and no question that the fetus was outside the uterus. After making an examination I became satisfied that the fetus was alive, but so very feeble that it seemed to me there was no hope of saving the child by operation; and then I had the thought, as I have now, that it is not the best time to operate at full term, unless you can save the fetus. In this case there seemed no hope of doing this, because there were only the slightest movements, while the day before they had been fairly strong, and the day before that well-marked and active. I advised against operation at that time, as I thought there would be more likelihood of saving the mother by waiting until the placental circulation had diminished very considerably, as I believe it does after the death of the fetus. What has become of the patient I am unable to say.

DR. FRANKLIN H. MARTIN.—I should like to make a few remarks on the power of electricity to destroy the fetus in these cases. I think it is a little too radical to say that no other treatment than laparotomy should be used for the treatment of tubal pregnancy; I believe, with those who have spoken to-night, that laparotomy should be performed for this condition if the diagnosis is reasonably certain, and the consent to an operation of all parties concerned can be obtained. If the patient has the confidence in her physician that the patient exhibited in this case, and the operation can be done, then perform laparotomy. There are cases, however, where laparotomy will not be tolerated. With Thomas in the lead, we have pretty good authority for the substitution of electricity in these particular cases.

In connection with this subject I have made some experiments. They are not extensive nor conclusive, but certainly suggestive; they are in the direction of determining which current to choose, if we decide to use electricity in these cases. I believe that Thomas and others recommend the faradic current in preference to galvanism. It has always seemed to me that it is desirable to employ every precaution against rupturing the sac; if this is so, and the feticidal effects of galvanism and faradism are the same—that is, if they are equally efficacious—I should say under those circumstances use galvanism; because, if employed with an absolute gradual rheostat so as to produce no break, it can be applied with the minimum abdominal mus-

cular contraction or other muscular contractions which favor the rupture of the sac. The experiments that I made were for the purpose of determining the relative feticidal value of the two currents. The experiments were conducted by the employment of incubating hens' eggs. A given number of fresh eggs, all obtained from as near the same source as possible, were placed in an incubator and placed under the charge of an expert chicken breeder. These eggs were divided previously into four divisions, and properly marked. At the end of one week after the eggs were set two portions of the eggs were operated upon by electricity; one portion by a very strong (as strong as could be tolerated by an unanesthetized patient) faradic current passing for five minutes; the other portion by a 20-milliampère current, electrodes 4 sq. cm. in area, also passing for five minutes. The galvanic current was applied by means of a gradual rheostat in such a manner as to produce no make or break in the flow.

At the end of two weeks of the incubation the other two portions of the eggs were treated by electricity in the same manner, with the exception that the faradic current was made much stronger (such as would be tolerated only by an anesthetized patient) and the galvanic current increased to 50 milliamperes.

When the eggs had passed the allotted time for hatching, about 80 per cent of the first lot acted upon by the faradic current hatched, while not one of those treated by the galvanic current hatched. Of the second lot about 60 per cent remained undestroyed, while not one of the chicks treated by galvanism succeeded in piercing its shell.

This proved to my mind quite conclusively, as far as chicks are concerned, that electricity in the form of galvanism is much more efficient than faradization; in fact, faradization had little effect upon the eggs. If this same ratio of value should exist in the power of electricity to destroy the human ovum, we have an additional scientific advantage in galvanism in being able to regulate our dose. One can cause to pass through a fetus encased in its sac exactly the same dose and the same density that caused the destruction of the fetus in these eggs, and I have no doubt whatever that a fetus of three or four months' growth would be deprived of life as effectually as the chicks were at the end of two weeks of incubation.

DR. CHRISTIAN FINGER.—I have heard the paper with a great deal of interest, and congratulate Dr. Banga on his very successful operations. The subject of ectopic gestation in general, particularly the later stages, is too large for discussion in one evening.

It is remarkable how of late years the number of reported operations for extra-uterine pregnancy has increased. Let us

take the last three years, 1887, 1888, 1889. In 1887 there were about 50 operations recorded, in 1888 there were 70 operations, and in 1889, 110.

Of the 70 cases reported in 1888, 15 were of tubal pregnancy in which the early operation was performed—that is, before rupture—with 3 deaths, a mortality of 20 per cent. In two of the fatal cases the sac was fastened in the abdominal wound. In the remaining 13 cases total extirpation of the tube with its contents was practised; the operation was, as a rule, comparatively easy, and the results consequently better.

Sixteen cases were operated upon at the time of rupture, with 5 deaths, a mortality of 31 per cent, or much greater than the mortality when the operation was performed before rupture of the sac. We may here mention Lawson Tait's 28 cases with only 1 death, a mortality of only $3\frac{1}{2}$ per cent. From the report of these cases, however, it cannot be seen whether the operation was performed at the time of, or some time after, rupture.

Ten cases were operated upon several weeks after rupture, and only 1 died, a mortality of 10 per cent. At this time the patient has recuperated to a certain extent. This, of course, does not mean that the operation should not be done at the time of rupture.

Then, again, come the 6 cases Dr. Jaggard has mentioned, where nothing was done and only 1 of which died. Dr. Parkes and Dr. Jaggard have mentioned that the contents of the sac in early tubal pregnancy are aseptic and will not cause peritonitis.

In 1889 there are on record 75 cases operated upon in the first half of pregnancy, of which 10 died, a mortality of 13 per cent. Twenty-eight of these were operated upon before the rupture of the sac, all of which recovered; 21 were operated upon at the time of rupture, with 17 recoveries and 4 deaths, a mortality of 19 per cent; 26 were operated upon some time after rupture, when the patient had recovered from its immediate effects, with 20 recoveries and 6 deaths, a mortality of 23 per cent.

The entire mortality for the first half of pregnancy in 1888 was 26 per cent, while in 1889 for the same class of cases it was 13 per cent. The rapid increase in the number of cases reported shows either that now an earlier diagnosis is more frequently made or that laparotomy is now more readily resorted to for peri-uterine tumor, whether a positive diagnosis of tubal pregnancy can be made or not. We also see that early operation in extra uterine pregnancy has given better results each succeeding year.

The rest of the statistics belong to the later periods of preg-

nancy, and I shall not mention them in this connection, because it really does not come under the subject of the paper—"Early Tubal Pregnancy, its Symptoms and Treatment." My own experience is almost none. I have seen one case where the sac had ruptured and very severe hemorrhage had set in, but in which, under expectant treatment, the patient finally recovered.

In 1888 the statistics gathered by Harris, of Philadelphia, showed 27 cases of laparotomy with living children. Of these, 25 mothers died, and of the 25 living children 13 died within 50 hours. This frightful mortality led Litzman to give the advice, based upon a record of 26 cases with 6 deaths, not to operate until the child was dead and the placental circulation had ceased, so as to avoid placental hemorrhage.

Lawson Tait was the first to take up a strong position against the practice of sacrificing children. He has recorded 3 cases of operation with living children, in which he saved all the children and two mothers. He further argues against Harris as to the lack of vitality in the children of extra-uterine pregnancy, stating that the 3 children above mentioned were living and healthy, so much so that one of the children he saved by this operation is his adopted son and prospective successor.

The operations recorded for 1889 show a great improvement in the results of operations in the last half of pregnancy, inasmuch as 35 cases had only 6 deaths, or 17 per cent. Furthermore, the operations with living children for the last two years tend to bear out Harris in his assertion that the regard for the child must be a secondary one, inasmuch as in 11 operations—6 in 1888 and 5 in 1889—only 4 living children were saved, and as 4 out of the 11 mothers died, a mortality of 36 per cent.

As to the fate of the mothers when operating after placental circulation has ceased, there were reported, in 1888, 18 cases with 6 deaths; in 1889, 26 cases with 3 deaths; in all, 44 cases with 9 deaths, or a mortality of about 20 per cent. Thus it is safer for the mother, as Litzman proposes as against Lawson Tait, to wait until the child is dead and the placental circulation has ceased.

In this connection I will also say that five years ago I thought exactly as Dr. Nelson does, and I think so now, and, in a case of extra-uterine pregnancy presenting low down in the vagina, waited until the fetus had died, and then waited six weeks longer until the placenta had ceased to pulsate, and then still two weeks more in order to be safe. I then removed the child, which was at full term, through the vagina. The case has been mentioned in this Society, as Dr. Holmes was kind

enough to see the case at the time with a view of determining whether such a fetus was septic or aseptic.

I do not see that we have time to discuss the details of the value of these late operations in extra-uterine pregnancy, whether through the vaginal wall or through the vagina.

DR. C. W. EARLE.—In the very brief remarks which I will make I desire more particularly to speak regarding the diagnosis of these cases. In the discussion up to this time it would seem that about the only thing to be done is to stop the growth of the fetus either by electricity or morphine, or remove the sac by laparotomy. The most important but difficult question, in my judgment, is to arrive at a correct diagnosis. Dr. Jaggard's remarks reminded me of a case to which I was called in consultation a few months ago. It was believed to be a case of extra-uterine pregnancy, and the gentleman who asked me to see the case with him thought an operation would be necessary. He based his diagnosis upon the points Dr. Jaggard made—that is, the thin condition of the wall found by digital examination; the wall that separated the finger from the fetus did not seem thicker than a sheet of paper, and yet after careful examination we both agreed that the fetus was inside the uterus, and the case went on to a safe delivery at full term. A few minutes before I started for this meeting I took Winckel's last work, translated by Edgar, and jotted down the symptoms upon which he based his diagnosis. While he considers that it is a difficult condition to diagnose, he believes, after an experience in thirteen cases, that he can usually arrive pretty closely at a correct conclusion. He bases his diagnosis upon these symptoms: first, the cessation of menstruation, previously normal; second, hyperemia and secretion of the breasts; third, hyperemia and lividity of the vulva (this symptom has been thoroughly discussed by Dr. Banga and Dr. Jaggard); fourth, strong pulsation of blood vessels in the vault of the vagina; fifth, softening, enlargement, and displacement of the womb; sixth, a clearly defined and growing tumor; and lastly, a murmur or souffle above the symphysis, heard at rather an early period. He insists on frequent observations and examinations, so that he can determine the rapidity of the growth of the tumor. I think Dr. Jaggard's statement that all authorities, except Americans, believe in early laparotomy in these cases, is a little too positive. In Winckel's book he states decidedly that he believes there is a chance for, first, electricity; secondly, for a trial with morphine or some of the other poisons that will destroy the life of the child.

DR. BAYARD HOLMES.—The mother is exposed in extra-uterine pregnancy to an immediate and to a remote danger. The immediate danger is fatal anemia when rupture of a tube

takes place, and the remote danger is sepsis in a limited hematoma or in a retained dead fetus. For the anemia there seems to be an indication for transfusion which may prove valuable. In a study of the bacterial condition of dead extra-uterine fetuses which I presented to this Society, my attention was called to the great danger of sepsis. Hematomata in other parts of the body are ordinarily removed without any febrile disturbance, except that early and transient rise which has been attributed to "ferment intoxication." The case is very different in those pelvic hematomata which are due to extra-uterine fetation. Both the retained dead fetuses and the hematomata in this region become infected, in the great proportion of cases, within six months, and a large percentage of the remainder by the end of a year. This fact, I believe, is to be explained by the cause of extra-uterine fetation, which there is great reason to believe lies in an antecedent infective inflammation in the tubes or the endometrium.

In order that an extra-uterine pregnancy may take place, there must be some malformation or deformity in the sexual apparatus. It does not take place in the normal condition of the tubes and uterus. That it may be a malformation we can readily see, because the present condition of the human uterus is evolved from a very large and divided uterus which is exhibited in the fetus and the lower animals. We may expect an occasional reversion to the original type and hence a risk of extra-uterine fetation. Such an arrest of development cannot often occur, because anatomists do not find these deformities frequently.

Most cases of extra-uterine pregnancy are preceded by a long term of sterility following an unhealthy puerperium, which in itself points to some deformity in the sexual apparatus arising from one cause or another. It is probable that most of these cases of deformity are due to a process of inflammation, and that inflammation is due to sepsis, and sepsis is due to infection; that accounts for the presence, in close proximity to this extra-uterine fetus, of septic material, and it is the presence of that septic material which converts the hematoma into an abscess. Of course we must always consider the possibility of pressure atrophy between the heavy, dead fetus and the contents of the bowel (hard feces) opening a communication between the bowel and the fetus and producing infection in that way. That must be considered in these cases, but it cannot well be considered in cases of large accumulations of blood. We cannot consider the possibility of suppuration or any septic decomposition of a large mass of blood without infection; that is impossible. Infection is rare through the circulation, but it is not wholly unknown. Therefore I look upon the indications for operation to be these two:

The dangers from hemorrhage and the dangers from sepsis. But the danger from sepsis is imminent on account of the probable etiology of extra-uterine fetation.

DR. E. W. SAWYER.—I will add but one thought, which was brought to my mind by the remarks of Dr. Nelson—that is, that a sort of false labor sometimes appears at term. This reminded me of a case I attended in 1874 with Dr. Justice, of Denver, in a little village in the foothills of Colorado called Boulder. The woman had expected to be delivered two years before our visit, and was visited by a very intelligent attendant who described a series of phenomena nearly approaching normal labor, which extended through a period of nearly twenty-four hours; then everything subsided. She carried her size for about a year, when she grew smaller and became active again. She was the wife of the proprietor of the single hotel there, and we visited her for the purpose of performing laparotomy. The details of the operation shock me now as compared to the precautions taken to-day. We operated and removed a fetus which weighed four and three-quarter pounds. Its tissue was converted into a sort of adipocere, so that in flexing the elbows the tissues cracked. The sac contained much pus, and the precautions against sepsis were not to any degree observed. The poor woman died at the end of about three days.

DR. H. W. BANGA, in closing the discussion, said: As to the diagnosis of these cases, Dr. Jaggard mentioned a case of retroverted uterus that was taken for extra-uterine pregnancy, and remarked that probably by using an anesthetic the true condition of the case would have been revealed at once; so I would repeat that for a correct diagnosis it is absolutely necessary to use an anesthetic, as I think we ought to do, and probably most of you do, if in doubt about the nature of any pelvic disorder. Dr. Jaggard took exception to my statement that laparotomy should be performed in all cases of rupture. I see I did not make my statement plain enough: I had in view what was *formerly* called extra-uterine pregnancy, thus excluding beforehand the cases of hematocele. Up to a few years ago hematocele was not described as one of the outcomes of a case of tubal pregnancy, and, as far as its clinical aspect is concerned, it takes an entirely different run from free rupture into the abdominal cavity. Since I have listened to Dr. Holmes' remarks I am more than ever convinced that laparotomy is the thing to be done in the latter cases.

I should think it only proper to try in this manner to stop the hemorrhage if the symptoms show that internal hemorrhage is the prime danger, or to remove a septic fetus and wash out the peritoneal cavity if sepsis is the more prominent symptom. In relation to this question of doing laparotomy,

we must always bear in mind that from year to year laparotomy, as such, becomes less dangerous; and we all know, too, that as each of us sees more of these cases, we also have more personal confidence in being able to control sepsis. I must say that I consider the dangers incident to the operation, as such, to be very small. I further refer Dr. Jaggard to what I said about the treatment of hematocele. I did not recommend any immediate surgical interference in those cases. I said I would first wait for resorption, because I knew that resorption is the rule in a case of hematocele; should it fail to occur I would try an operation. Dr. Parkes related a case that he cured by aspirating; I have had a similar one. Then, if the symptoms warranted it, I would open and evacuate, either through the abdomen or through the vagina. In my second case, the steady increase of the tumor causing intense pain, and the displacement of the bladder away above the symphysis so that the patient was entirely unable to pass water, were the direct indications for operating. In cases of hematocele there is very little danger of the patient bleeding to death, because, no doubt, the beginning of the hemorrhage occurs into the distended tube or between the folds of the broad ligament. During the first hours or days it is a hematoma, and only after the tension of the bloody tumor has become such that the covering peritoneum finally tears will there be a free effusion of blood into the abdominal cavity. This was quite plain, I think, in my second case. There was a hematocele filling out the Douglas cul-de-sac up to near the umbilicus, and inside of this sac was what we might call a hematoma of the left broad ligament, or rather a hemato-salpinx, because the big coagulum corresponded to the middle of the left tube, both ends of which were torn by the accumulation of blood within.

Hardly ever is there any immediate danger from hemorrhage in case of hematoma or hematocele, because the coagulum which forms at the seat of the first oozing acts as a compressing tampon on the ruptured blood vessels. But where the sac ruptures freely into the abdominal cavity, the patient is liable to bleed to death, either in a few hours or a few days. I remember about nine years ago having seen such a case. It was a very hot day in July. The lady was getting ready to go down town, and while she was standing before the glass, giving the finishing touch to her toilet, she was suddenly seized with vertigo and a sharp pain in her abdomen; she began to vomit, and had all the symptoms of cholera morbus. Several physicians were sent for, and, as she had diarrhea and tenesmus within an hour of the first attack, they took it for a case of cholera morbus. This occurred about 10 o'clock in the morning, and I was called in about 9:30 in the evening. At that time I was making reports from

German periodicals for Dr. Mundé, and there was much discussion going on about extra-uterine pregnancy; so that when I saw the patient I at once thought, "I wonder if this is not a case of rupture of an extra-uterine ovisac?" She was almost bloodless; the lips and conjunctiva had lost all color; she was breathing heavily, had no pulse; the skin looked waxy and was covered with a cold sweat; she was apparently dying. By digital examination I found the posterior cul-de-sac bulging down, giving a peculiar doughy, soft touch, which to me plainly demonstrated an accumulation of something like coagulated blood.¹ While I was there the patient died. I was so much interested to know what it was that I got permission of the husband to make a post-mortem. On opening the abdomen the black, half-coagulated blood welled out, and, after removing it, I found a tubal ovisac about as large as a big plum, which had burst, thus causing unhindered oozing of blood, and death. The patient had been married eight weeks; had gone two weeks over her last menstruation.

I should think it impossible to confound a case of free hemorrhage into the abdominal cavity and a case of hematoma or hematocele retro-uterina.

To Dr. Parkes I would say that I did not leave any coagula in the hematocele sac; I opened it and scooped it out with my hand. Of course there is nothing so apt to undergo quick disintegration as blood.

FETUS PAPYRACEUS.

Dr. W. W. JAGGARD.—My friend and former pupil, Dr. A. E. Froom, of Chicago, gave me the specimen that I have the honor to present.

History.—May 1st, 1890, Dr. Froom was called to see Mrs. M., age 21 years, recently married; three months advanced in her first pregnancy; suffering from nausea and vomiting. The complaint not yielding at once to the usual simple remedies prescribed, the patient applied, but without benefit, to several prominent physicians. Finally, about the fifth month, she returned to Dr. Froom. At this time the woman was in a most distressing condition—incessant vomiting and retching, diarrhea, bloody stools, tormina and tenesmus, fainting spells. The woman complained of intense vulvar and anal pruritus, and upon examination Dr. Froom discovered "a scaly eruption about the parts" and infiltration of the inguinal glands on both sides. Alopecia was also observed. The diagnosis of syphilis was made, although a careful search failed to reveal the initial lesion.

¹ Veit, as I have read since, claims that it is impossible to diagnose by digital examination an accumulation of coagulated blood in the abdominal cavity.

Under the exhibition of mercury the woman showed immediate and marked improvement.

August 12th she fell in premature labor. No fetal movements had been observed for the week previous, and the heart tones were not perceptible. After four hours of labor a macerated fetus, corresponding to the seventh month, was expelled; it was followed in ten minutes by the placenta. Dr. Froom was about to irrigate the uterine cavity when he noticed the intact membranes of a second ovum presenting at the os externum. This second ovum, corresponding to the third month, was easily expressed. Puerperium normal; uterus is single. The father admits syphilitic infection three years ago.

The specimen consists, as you see, of a twin pregnancy.

The first twin, female, length 35 cm., weight 1,172 gm., with its macerated epidermis, is a typical example of the *fetus sanguinolentus* (E. Martin). It corresponds to the seventh month. It also presents certain objective signs of syphilis that are perfectly distinct from mere cadaveric changes. These are: 1. The line of syphilitic osteo-chondritis at the junction of the diaphysis with the epiphysis in the long bones, described by Wegner. In this specimen you can see this line in the upper and lower epiphyses of the femur. 2. The spleen is greatly increased in volume, consistence, and weight. It weighs 12 gm., or 0.98 per cent of the total weight of the fetus, while the average normal weight of the spleen at birth is 9 gm., or 0.3 per cent of the body weight. According to Ruge, in normal fetuses under 2,000 gm. the weight of the spleen is $\frac{1}{400}$ of the body weight; in non-syphilitic macerated fetuses, $\frac{1}{800}$; in syphilitic macerated fetuses, $\frac{1}{100}$. In this case the spleen is $\frac{1}{97}$ of the body weight. 3. The liver weighs 52.5 gm. According to Ruge, in normal fetuses under 2,000 gm. the weight of the liver is $\frac{1}{21}$ of the body weight; in non-syphilitic macerated fetuses, $\frac{1}{46}$; in macerated syphilitic fetuses, $\frac{1}{23}$. In this case the liver is about $\frac{1}{22}$ of the body weight.

No gross lesions were detected in the cord, lungs, liver, spleen, and these organs have not yet been examined microscopically.

Unfortunately the placenta was thrown out by the nurse. Dr. Froom says the cord was edematous (?), and that an amber-colored, transparent substance, of the consistence of jelly, was attached to the membranes.

The ovum of the second twin is intact; its weight is 88.5 gm., and it presents an instance of mummification—the usual post-mortem change in fetuses between the third and sixth months in utero. The placenta, fully formed, is flattened and compressed into a solid disc 10 cm. in diameter. The liquor amnii has disappeared. The fetus, about three months old,

male, 13 cm. in length, is a typical example of the *fetus papyraceus*—the form commonly observed when a dead fetus, retained in utero for a considerable period, is strongly compressed and flattened out, as the name implies. The conditions for this peculiar mode of compression are best supplied in twin pregnancy, in which, while one fetus dies, the twin goes on to complete development.

The points of interest in this specimen that I beg to mention are :

1. These fetuses—each with its own placenta, chorion, and amnion ; the one female, the other male—contained within the same single uterine cavity, are probably the resultants of the simultaneous fecundation of two ova. These ova may have come from the same Graafian follicle, or from the same ovary, or from both ovaries. According to the old view, the fact that the placentaë are entirely separate would indicate that the ova did not come from the same ovary. For some cause, not now discoverable, the ovum containing the male was crowded to the wall by the other and converted into this flattened-out, paper-like mass.

The specimen, probably, is not an example of superimpregnation. While the possibility of superfecundation—that is, the successive fecundation of two or more ova out of the same ovulation period—in the human animal must be admitted, its actual occurrence has never been demonstrated. The not uncommon occurrence (1) of a white woman having twins, one a mulatto, the other white, and (2) of a black woman's twins, one black, the other a mulatto, does not prove successive fertilization by different men. Kussmaul has correctly pointed out that in the crossing of races the offspring may resemble most closely either parent, so that a white infant born of a white woman may be the legitimate child of a negro. Schultze emphasizes this opinion, and demands, for the demonstration of superfecundation, two different children of a white woman after cohabitation with two men differing in race from each other and from the mother. Such an observation up to the present has not been recorded. Undoubtedly superfecundation occurs in mares, bitches, and cats, among the lower animals, but then multiple pregnancy is the norm among these animals, while it is exceptional and closely allied to the abnormal in the human animal. Conclusions drawn from observation of the lower animals accordingly cannot be applied directly to human beings.

The principal arguments against *superfetation*—that is, conception during pregnancy—lie in the suppression of ovulation and the disappearance of the cilia of the epithelium of the endometrium during gestation, and finally the entire absence of observations that would make this hypothesis plausible.

2. First pregnancies are seldom multiple pregnancies.

3. The objective signs of syphilis in the macerated fetus, that are perfectly distinct from the cadaveric changes of non-syphilitic macerated fetuses retained within the cavum uteri. I venture to emphasize this point, because it is a common error to regard all macerated fetuses as syphilitic. Indeed, between 70 and 80 per cent of such cases are syphilitic, but there remains a certain number in which the *fetus sanguinolentus* is merely the result of cadaveric change. In some of these cases of the latter class, it is very difficult to make an anatomical diagnosis, since relative increase in weight of the viscera is not an absolutely certain sign of syphilis, and the normal line of Guerin may come to resemble the osteo-chondritis described by Wegner.

EXHIBITION OF BROMIFORM.

DR. CHAS. W. EARLE.—I want to occupy two or three minutes of the time of the Society in the consideration of a very unpopular procedure—that is, the administration of medicine—and introduce to your notice Bromiform, the latest remedy for whooping cough. About six weeks ago my attention was called to this drug by an article in a German paper, and about that time an article was also published in the *Medical Record* by Dr. Fischer, reporting some sixteen cases in which he had administered it with marked benefit. By this time I had procured the medicine, and have now had experience with it in six cases. In five cases there has been marked improvement, although it was not a fair trial, because they had passed pretty well along into the second stage and had commenced to recover. In some of these cases there were thirty paroxysms a day previous to administering the drug, and in four days the paroxysms had been reduced to ten. It has rather a sharp, pungent odor, and is best administered in syrup of acacia. I usually combine it with a little paregoric. The dose for a child two years of age is two drops, a child four years old four or five drops. Usually the administration of from twenty to sixty drops in five or six days lessens the number of paroxysms. It is best given after meals; and the children to whom I have administered it have made no objection to taking it. It is recommended by several of the leading practitioners in Vienna, and I bring it before the Society because we are having considerable whooping cough and I think it would be well to give it a trial.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, March 7th, 1890.

DR. J. TABER JOHNSON, *President, in the Chair.*

DR. THOMAS M. NORTON read a paper entitled

UNUSUALLY HIGH PYREXIA FOLLOWING CONFINEMENT, WITHOUT
APPARENT CORRESPONDING STRUCTURAL LESIONS.¹

DR. COOK said that it was somewhat hazardous to venture on the diagnosis of a case that he had not seen, especially as the doctors in attendance upon the case had themselves failed to make a diagnosis. But from the very graphic picture of the case as presented by Dr. Norton, and the subsequent statement that the delivery was accomplished by the aid of forceps and that there was laceration of the cervix, he had no hesitation in saying that the case was one of septic fever. He thought that the suggestion that the hyperpyrexia was due to malarial poison would be excluded by the fact that the liberal administration of quinine had no influence upon the pyrexia. This case serves to strongly emphasize the importance of thorough antiseptic irrigation, to be commenced immediately after every instrumental delivery, for in these cases there is probably some traumatism which affords a ready channel for septic infection. The doctor says that he directed the administration of antiseptic vaginal injections in his case as soon as the fever developed. Dr. Cook thought that at that stage, if the uterine cavity had been thoroughly irrigated, there would have been a decided fall of temperature. To show the frequency of septic fever in lying-in women, Dr. Cook referred to a paper read before this Society several years ago by Dr. H. D. Fry, in which it was very clearly shown that what was commonly called "milk fever" was really septic fever.

Dr. Cook had very naturally inferred from the paper that laceration actually existed, as he did not know of any "symptoms" indicative of that condition other than the laceration itself.

DR. SUTER gave a short account of the labor of the patient

¹ See original article, page 62.

referred to, which lasted from five till eleven o'clock. He used Elliot's forceps. There was no laceration of the perineum, though he could not say there was no laceration of the cervix, as an examination was not then made.

DR. BUSEY thought the diagnosis in this case was a debatable issue. The fever began on the afternoon of the third day, and three theories had been suggested in explanation of its cause. Its malarial origin was disproven by the history of the case and the failure of quinine to diminish the temperature. Yet it was true that the amount and dosage was much less than is usually given in cases of puerperal malarial fever. Milk fever of septic origin was also disproven by the history of the case. He thought it was a case of septic fever due to absorption from the cavity of the uterus. Those who would antagonize this view of the case would, perhaps, ascribe the favorable result to the curative effect of the fever mixture, which seemed to have controlled the temperature in a remarkable manner. During the time this mixture was administered the vaginal injections were continued, and it is not improbable the offending material had escaped from the cavity of the uterus and been washed away by the injections. Absorption had therefore ceased and recovery followed.

Some five or six years ago he had reported a case in which the lady had a chill during the early morning hours of the twelfth day of the puerperium, which he at first thought was malarial; but failing to reduce the fever by the use of quinine freely given, and another chill having occurred during the night of the same day, he suspected septic infection. A careful digital examination, and also by the speculum, failed to confirm his suspicion. Nevertheless he washed out the cavity of the womb, discharging therefrom about a half-thimbleful of pus. The fever subsided and convalescence was speedily re-established. He therefore thought that, if Dr. Norton had irrigated the cavity of the uterus during the early stage of the fever, the case would have run a briefer and more satisfactory course.

DR. HARRISON said, without wishing to throw any doubt on the remarks of Drs. Cook and Busey, that he had seen quinine given *ad nauseam* in fevers of malarial origin, without the slightest effect until after a mercurial purge was given, and he wished to emphasize this preliminary treatment.

DR. McARDLE said he was surprised at Dr. Cook's implicit faith in quinine without preliminary doses of calomel, as referred to by Dr. Harrison. The administration of quinine in this case does not exclude malarial fever.

DR. H. L. E. JOHNSON said there is little doubt that this was a case of septic infection. The most virulent cases often present

no local signs, and often just such a history as Dr. Norton has given.

Often when a piece of membrane has been retained there are no local signs, no tenderness, discharges normal without odor, but fever will continue until the twelfth or fifteenth day, when death takes place.

Some cases are mild in themselves and get well with little if any treatment. A febrifuge is often better than quinine; he has noticed that when quinine is given the temperature often goes up.

He referred to the remarks of Dr. Busey, and said he did not think septic infection could occur so late; he thought probably that they were cases of subinvolution, in which there is no pain about the uterus, and he has found that they yield to vaginal injections.

DR. BUSEY.—It is proper that I should say that there was neither subinvolution nor pelvic pain or tenderness in the case I referred to. Nor was it the first or only case in which infection has taken place at such late date.

DR. FRY.—Forty years ago such discussions would have been in order, but since the investigations of Semmelweiss the pathology of fever occurring in woman soon after childbirth had been made so clear that little difficulty is now met with in reaching a diagnosis.

For some reason practitioners are slow to recognize or admit that a fever is due to puerperal infection. They treat cases for malarial fever, for typhoid and typho-malaria, for rheumatism, cellulitis, peritonitis, etc., and lose valuable time by neglecting local treatment. Dr. Fry did not claim that every case of fever occurring in a woman soon after childbirth was due to infection, but he believed that ninety per cent of such cases were. Every case should be considered due to puerperal infection and treated accordingly until it was proven not to be. The usual method is to consider cases something else and treat them on that theory until it was too late.

The proper treatment of all these cases is local. The genital canal should be cleaned and inspected, lacerated surfaces cauterized, and antiseptic irrigation employed. The point of absorption is often outside the uterine cavity, and this should be determined before resorting to intra-uterine treatment.

The previous history of the case often aids in settling this point. The introduction of the hand or instruments into the uterus during or immediately after labor, the delivery of a macerated fetus, or the probability of retained clots or placental tissue, would indicate the demand for intra-uterine treatment.

The valuable lesson taught by this discussion is: Do not

delay and treat these cases with constitutional remedies for other troubles, but go at once to the seat of disease and treat it locally.

DR. TOMKINS agreed with Dr. Cook. He did not think it a case of subinvolution, but most likely a shred of membrane left in the uterus caused septic infection.

DR. McARDLE said nevertheless this patient did get well and the uterus was not irrigated.

DR. FRY replied that all the time this fever mixture was being given vaginal douches were also given.

DR. NORTON said that nothing but this fever mixture would bring the temperature down; when it was omitted, even though the douches were continued, the temperature would rise.

Stated Meeting, April 4th, 1890.

DR. S. C. BUSEY *in the Chair.*

DR. THOMAS C. SMITH read a paper on

LACERATIONS OF THE CERVIX UTERI.¹

DR. FRY did not believe, by any means, that all cases of laceration of the cervix required operation. Quite a number of cervical tears undoubtedly heal during the puerperium, especially if the labor has been conducted antiseptically. Other cases may not unite, yet they never cause the slightest symptoms and do not require any treatment. Others are benefited by topical applications. Lacerations that are covered with unhealthy tissue, or which present eroded surfaces and are accompanied with subinvolution of the uterus and endometritis, demand and are greatly benefited by operation. Success means not merely reunion of the divided surfaces, but the reduction in size and weight of the womb and the relief of endometritis.

DR. T. E. McARDLE was pleased that the profession was coming more to occupy a middle ground in regard to the treatment of laceration of the cervix. He did not understand Dr. Smith to say that the operation was to be eliminated from the list of justifiable surgical procedures; but he did understand him to say, and in this he fully agreed, that not every case of lacerated cervix needed a surgical operation for its cure. Each case must be judged by itself, and no absolute rule could be given relative to the matter. It was his rule to spend months, if necessary, in preliminary local treatment before operating. He had recently operated upon

¹ See original article, page 46.

a case on account of the fact that the patient's mother had died a few years ago of cervical epithelioma. He did not believe that laceration of the cervix was responsible for all the nervous phenomena a woman might manifest. Women who have never been pregnant complain of the same set of symptoms as women with lacerated cervixes. We are too prone to look to the pelvic organs as the cause of all sorts of nerve-tire in woman. That laceration of the cervix is responsible for sterility is not demonstrated by any means, and he was exceedingly doubtful about the matter. He thought we were seldom, if ever, able to account for acquired sterility. He had seen cases, in which very slight laceration existed, in whom there were nervous symptoms attributed by gynecologists to laceration, with which opinion he did not agree.

DR. SMITH said there was no essential difference between what the gentlemen had said and the views expressed in his paper; consequently there was nothing more for him to say.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Stated Meeting, June 12th, 1890.

The President, DR. W. H. WENNING, in the Chair.

DR. E. GUSTAV ZINKE read a paper on

THE FIFTH AND SIXTH POSITIONS OF THE VERTEX, WITH REPORT
OF A CASE AND REMARKS UPON THE MANAGEMENT OF
OCCIPITO-POSTERIOR POSITIONS.¹

DR. J. L. CLEVELAND thought it was not always so easy to say the occiput is presenting. Fine diagnoses cannot always be made, and in his opinion even the essayist might have been deceived in his case. He himself was not in position to discuss the management of such cases as were presented, but he must say that on several occasions he has been surprised to see the chin when he supposed the occiput was presenting. One of the main features in the diagnosis is that the forceps slipped and will slip in occipito-posterior positions.

DR. TRUSH believed that these positions occurred, but were rare, and when occurring were probably always the result of

¹ See original article, page 69.

an anomalous formation of the respective pelvis, or possibly of the fetal head. He could not conceive of the possibility of a normal fetal head entering the normal maternal pelvis in the manner indicated by the essayist. Speaker admitted that he at times had been unable to make a positive diagnosis of the position of the presenting head; these had been instances of long-continued impaction of the head with large caput succedaneum, rigidly contracted uterus, and either tense or thick abdominal walls. With physical conditions like these a correct diagnosis of position was, he thought, all but impossible. Quite recently he had encountered a case of this character; he had diagnosed an occipito-anterior position, but found later that the occiput was posterior.

He could not agree with the essayist that digital pressure upon the fetal head was ever effective in endeavors to change its position. We were too prone to regard results following upon such efforts as the direct consequence thereof, when in fact the change took place in obedience to an inherent mechanism. Great care certainly was requisite in all such endeavors, lest we should do more harm than good.

As regards the use of the forceps at the superior strait, he regarded these operations as very hazardous, and, therefore, always delayed this measure till the last possible moment, the last moment compatible with safety to both concerned.

DR. GILES MITCHELL acknowledged that such positions could possibly happen, but they occur very seldom. The essayist tells us what to do and how to make this diagnosis, but supplements the statement with the fact that he failed in the diagnosis himself. He could not understand how the error was made, but thought that possibly the case was complicated by the early application of forceps.

He agreed with the previous speaker that, when child and pelvis are normal, the head will not pass through in the conjugate diameter without change in its position. He had seen a case of occipito-posterior presentation delivered in this position in which the child weighed thirteen pounds.

He had seen several cases of occipito-posterior positions, and if let alone believed, as a rule, they would take care of themselves.

DR. W. H. TAYLOR did not believe in the continuance of these positions; he thought it impossible for any head of ordinary diameter to pass through the pelvis as described in these positions. Winckel and Charpentier are both of this opinion. The head must either be very small, or must be very large and meet with great resistance, in order to have a posterior delivery. He agreed that the introduction of the whole hand was necessary in order to make an accurate diagnosis. Dr. Isaac Taylor advocated turning such cases into face pre-

sentations. He thought any attempt to force the head upward, as advocated by the essayist, was unwise, and did not think it practicable; he had seen a number of such cases, but had not even considered such a procedure.

DR. BYRON STANTON did not think a sixth position could occur; did not mean to say it was impossible, but believed the occiput would always be deflected either to the right or left; that in this case, which was not seen till after the head was far down in the pelvis, the presentation was probably a right or left occipito-posterior position, and the occiput rotated backward instead of forward. A positive diagnosis of the position at the beginning of labor could only be made while the head was still at the brim. After descent and rotation we could not always tell what the position was originally.

DR. PALMER said: The paper is an able one, the subject an interesting one, and the remarks made by the members are applicable and valuable. What he would say would pertain to a point not as yet touched upon.

One of the ablest chapters on the mechanism of labor ever written was by Hugh L. Hodge, of Philadelphia. This work will ever be a masterpiece. While Hodge makes six positions of the presentation of the head, after Baudelocque, and while, without doubt, cases of the fifth and sixth positions do rarely occur, the speaker thinks that practically these positions could all be included within four: the impinging of the occiput upon the four inclined planes of the pelvis. The anterior inclined planes of the pelvis are much larger than the posterior inclined planes. The dividing line between the anterior and posterior inclined planes is a line extending from the pelvic brim three-quarters of an inch anterior to the sacro-iliac synchondrosis down to the spine of the ischium. Any round, convex body impinging against the anterior inclined plane would be propelled downward, inward, forward, and outward; upon the posterior inclined plane it would move downward, inward, backward, then forward and outward. Rotation forward was inevitable when such a body impinged upon the anterior incline; that is, not only when the occiput first looked forward, but also when it first looked transverse, or even backward (so far as to the line of demarkation between the anterior and posterior inclined planes). On the other hand, if the occiput should impinge upon the posterior inclined plane, posterior rotation would almost as surely occur, unless artificial aid to create anterior rotation was utilized, or unless the head was undersized or the pelvis unusually capacious. Anterior rotation, even with the occiput upon the posterior inclined plane, may be secured artificially by taxis with one or two fingers on the brow, by the hand in the vagina, by the

vectis (the oldest, but by no means an obsolete, obstetric instrument), and by means of the forceps. Anterior rotation is always more easily accomplished when flexion of the head is as complete as practicable. Hence the value of inducing flexion by pushing up the forehead and bringing down the occiput. If flexion is impossible or impracticable, full extension is the next best thing to bring about the conversion of the occipito-posterior position of the occiput into a face presentation. Anterior rotation of the occiput may sometimes be feasible by having the patient take the genu-pectoral position of her body and then turning the occiput around with the hand within the vagina, grasping the fetal head and pushing it above the pelvic brim. Of course if labor has been long continued, the liquor amnii long drained off, the uterus tetanic, and the fetal head impacted into the pelvic cavity, this upward movement of the fetal head is impracticable and attempts to bring it about are hazardous. Unquestionably if the ideas I have spoken of, pertaining to the mechanism of labor, are correct, not a few cases of occipito-posterior positions are seeming, not real. In other words, the occiput may look somewhat backward when at the pelvic brim or in the pelvic cavity, yet the actual condition may be one of real, genuine occipito-anterior position, because impinging upon an anterior inclined plane, right or left. Real cases of occiput posterior are not as common as may appear.

DR. E. G. ZINKE, in closing, said he hardly thought he would be accused of injudicious treatment. There is at times considerable difficulty in making a diagnosis, but it is always possible when the presenting part is at or below the superior strait and the os sufficiently dilated.

Some of the members affirm that it is next to impossible to push the head upward. He would like to ask if they have ever tried it under chloroform; if not, the criticism is *nil*. He remembers a case in which head and hand were crowded down into the pelvis, and futile efforts at delivery (by turning) had been made by two men for twelve hours without chloroform, and he succeeded in less than half an hour with the aid of chloroform.

Speaker had been blamed by one of the gentlemen for early application of forceps, and likewise that he should have made diagnosis certain by the introduction of the whole hand. The reason that the whole hand was not introduced in this case was that he had made a diagnosis (that of occiput anterior), which, however, proved to be incorrect. No one is beyond error in diagnosis, and hence the criticism is absurd.

Drs. Stanton and Taylor expressed opinions that the head entered in an oblique diameter; the site of the caput succedaneum proves clearly to his mind that that was not the case.

The speaker has heard the fetal heart in occipito-posterior positions. It is his opinion that both pelvis and child are normal. The latter weighed about nine pounds. He had never had occasion to attempt to change an occipito-posterior to a face presentation, but believed it possible and would not hesitate to try the procedure, provided he failed in his efforts to make an occipito-anterior position out of it.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Thursday, October 2d, 1890.

Specimens.—DR. WILLIAM DUNCAN: (1) Tubercular Disease of the Ovaries and Fallopian Tubes; (2) Hemorrhage into the Left Ovary and Fallopian Tube; (3) Cancer of the Body of the Uterus. MR. ALBERT DORAN: Delbastaille's Speculum à Glissières. DR. HERMAN: Extra-uterine Gestation Removed before Rupture. DR. JOHN PHILLIPS: Pelvic Viscera in a Case of Vaginal Injection of Acid Nitrate of Mercury.

CASE OF SYMMETRICAL ERYSIPELAS, FOLLOWED BY PREMATURE LABOR; ECLAMPSIA ON THE NINETEENTH DAY POST PARTUM; TWENTY-EIGHT PAROXYSMS; NO RENAL DISEASE; RECOVERY.

DR. J. B. HURRY read a paper on this case.

The patient, aged 35, was in her sixth pregnancy when, without previous warnings, she began to have severe headache, pains in the limbs and loins, shivering, rapid pulse, hot skin, anorexia. She was two weeks from full time, and within twelve hours of these symptoms she was suddenly delivered of a child. Slight post-partum hemorrhage. Two days later she had an erysipelatous eruption in front of each ear, quite symmetrical and pitting on pressure. No sore throat. Temperature 102.5°, pulse 125. Lochia natural. The eruption spread over most of the face. Constitutional symptoms became severe, and on the fourth day suckling was discontinued. The urine was free from albumin. On the fifth day there was slight tympanites of the abdomen. On the twentieth day she was apparently much better, but had a serous discharge from, and deafness of, the left ear. She was suddenly seized with epileptiform convulsions involving the whole body.

There was total loss of consciousness; pupils dilated, no reaction to light; conjunctival reflex abolished; slight foaming at the mouth; urine passed involuntarily. In an hour consciousness had partially returned. She had twenty-five more fits in the next forty-eight hours, very severe the first twelve hours, less and less so afterward. There was never any albumin. Chloral was given per rectum, and chloroform by inhalation. The fits ceased. The patient improved, but complained of headache. Mental powers were unimpaired. The discharge from the ear ceased and good hearing was regained. On the thirty-fourth day she was practically well.

The interest of this case lay: 1. In erysipelas attacking a woman before labor, and apparently inducing premature delivery. 2. In the symmetrical lesions. 3. In erysipelas of the face attacking a lying-in woman without provoking puerperal septicemia of severity. Perhaps this was due to the treatment by antiseptic pads applied to the generative organs, thus preventing the access of contagion to the lacerated parturient canal. 4. In the interval of nineteen days between delivery and the outbreak of eclampsia. 5. In recovery after twenty-six fits; and 6. In the absence of albuminuria.

DR. BRAXTON HICKS pointed out that in the paper he had brought before the Society many years ago he had not stated that puerperal fever was caused by scarlatina. The exact relationship between zymotics, erysipelas, and puerperal fever, so-called, had yet to be made out. For himself, it seemed most likely that in the bad cases, similar to those seen in hospitals formerly, there were two poisons acting concurrently. He recommended the collection of clinical histories from all parts of the world, particularly in new towns not yet saturated with zymotic diseases.

DR. HERMAN said that Dr. Hurry took it as established that erysipelas was one of the causes of puerperal fever. Erysipelas and puerperal fever had been associated in some hospitals, and Dr. Minor had compared the prevalence of these two diseases in different States of America, showing that they went together. But he (Dr. Herman) did not think the evidence adduced by Dr. Minor bore out this conclusion. The so-called epidemics of puerperal fever were only very slight elevations of the number of cases above the general average, and the number of times that an increased death rate from erysipelas went with an increased death rate from puerperal fever was not more than could be accounted for by fortuitous coincidence, together with the fact that the spread of both diseases was favored by uncleanness and bad ventilation. Thus both diseases were found especially frequent among German immigrants. Fehleisen had shown that cutaneous erysipelas was quite different from phlegmonous erysipelas. Dr. Her-

man had no doubt that the latter was one of the diseases included under the term puerperal fever. This was the disease which Virchow had called *erysipelas malignum internum*. Gusserow had shown that cutaneous erysipelas produced only the same disease in a lying-in as in any other patient. He (Dr. Herman) had seen a cutaneous erysipelas in the lying-in woman, and also in the infant, running its ordinary course without producing puerperal fever. He agreed with Dr. Braxton Hicks that cases in which patients appeared to suffer from erysipelas and from septicemia were cases of mixed infections in which the poison of both diseases had been received by the patient.

DR. HEYWOOD SMITH asked if any observations had been taken of the frequency or character of the pulse between the fits.

DR. BOXALL drew a distinction between facial and, as it might be termed, pelvic erysipelas. He thought them both due to the same cause, and that facial erysipelas might be transmitted to the pelvis either through the tissues or by escaping from the body and being reintroduced into the genital tract. He compared facial erysipelas with whitlow. He was convinced that when the erysipelatosus poison implicated the pelvic organs it produced a local and general disturbance, which, as far as clinical observation went, was very often indistinguishable from puerperal fever, and invariably resulted in a puerperal disease of grave and often fatal type. No blush appeared beyond the vulva in many such cases, and hence their erysipelatosus character was apt to pass unnoticed.

DR. ARMAND ROUTH thought that as there was distinct evidence of otitis, the convulsions were due to a transient meningitis, secondary to the erysipelas, and were not in any etiological sense puerperal.

DR. CLEVELAND disagreed as to the analogy between cutaneous facial erysipelas and whitlow. From what he had seen of both affections, there was no tendency to suppuration in the former, while in the latter it was marked. He had always regarded the importation of pus into puerperal surroundings as an element of danger, and could understand the necessity for taking precautions if a lying-in woman happened to be suffering from whitlow.

DR. HURRY in reply said no observations had been made on the pulse rate between the fits. He thought the character of the fits as well as the subsequent history of the patient pointed to true eclampsia, and that the discharge from the ear was due to facial erysipelas.

DR. HERMAN read part of a paper on, "Four Cases of Pregnancy with Bright's Disease."

ABSTRACT.

1. WERTH AND VEIT, J.: EXTRA-UTERINE PREGNANCY (*Arch. f. Gyn.*, xxxv., 3).—The subdivision of extra-uterine pregnancy into a purely anatomical first and second half is explained. The question in the first months is whether the gestation is pediculated or not, and whether or not it can be treated. Tubal pregnancies are regarded as the most frequent, and the article is restricted to their consideration. The latter generally offer slight difficulties to operative treatment in the *first months*, whether pediculated or intraligamentary. The diagnosis at this period is regarded as impossible by some, or extremely difficult, and by some as simple. This divergence of opinion is not so remarkable in the face of the fact that it is always a question of *probable* diagnosis; the latter can generally be made. The hitherto accepted symptoms—labor-like pains, hemorrhage, regarded as symptoms of threatening rupture—are no longer considered sufficient. The diagnosis of a living or dead fetus may be approximately made. If a tubal tumor of soft consistence, without fluctuation or tension, lies next the uterus, a tumor which indicates tubal pregnancy, the fetus is alive; if the fetus is dead, the fetal sac becomes tense and harder from hemorrhage into the interior, and there are signs of local peritonitis.

The treatment of extra-uterine pregnancy cannot bring about *restitutio ad integrum*. Three methods are applicable. (1) Electrolysis; (2) Injections of morphine into the fetal sac; (3) Laparotomy and complete removal of the fetal sac. The danger of rupture of the ovisac is certainly increased by the employment of electricity. Morphine injections are effective but dangerous. Laparotomy is of great value; with an intact fetal sac, the method is not dangerous, and is followed by a large number of cures. But the cases are nevertheless rare, and the diagnosis often made only during or after operation. It is of prime import to determine what course to pursue when disturbances take place in the ovum—rupture of the sac, hemorrhage into the abdominal cavity. Shall laparotomy be performed? Fehling, Küstner, Frommel, and Swartz agree with the writer in favor of such a course; others do not recommend immediate operation, as an hematocele may develop at the moment of rupture. With small ruptures the hemorrhage will soon cease. The formation of hematocele is favored by

a slow hemorrhage and when the intra-abdominal pressure is great or when pelvic peritonitis with adhesions already exists. The authors have seen six moribund patients; they operated on three; the other three, for whom nothing was done, all recovered. Of the three cases operated upon, two died. It is necessary to individualize in patients who have lost much blood. If no bloody tumor can be felt—that is, if the hemorrhage has occurred freely into the abdominal cavity—laparotomy is indicated. If an hematocele, however, can be made out, even in a pulseless patient, one should await events as far as operating goes.

“Tubal abortion” produces symptoms. In addition to hemorrhage externally, labor-like pains set in. The fetus may be expelled from the tube. The authors saw one such case; the fetus was expelled into the abdominal cavity, leading to hemorrhage. Further dangers which occur after death of the fetus, or which may require operative interference, are hemorrhage and pelvic peritonitis.

Werth agrees with Veit in regarding tubal pregnancy as the most frequent. Pure tubal pregnancy generally develops between the ligament; the fetal sac pushes its way between the fold of the broad ligament without a break in the continuity of its walls. If the sac ruptures the fetus perishes. If the pregnancy is to be continued to full term, it is requisite that the ovum lie on the ampulla of the tube. The treatment of tubal pregnancy at term has not been satisfactory. We should not wait for the death of the fetus in cases of advanced extra-uterine pregnancy, as it brings fresh dangers with it. At the operation the fetal sac with the placenta should be removed. This is often impossible in the later months, because of numerous firm adhesions. If we are certain in such cases that the fetal sac is aseptic, it may remain. If it be impossible to remove the placenta, it should be coated with a layer of salicyl-tannin; three cases were recently so treated with success. Herman has recently proposed to operate per vaginam in suitable cases. The authors restrict such a procedure to cases in which decomposition and pus formation have begun in the fetal sac, and when it is probable that the placenta occupies the site of the incision necessary in laparotomy.

L. R.

THE AMERICAN JOURNAL OF OBSTETRICS

AND

DISEASES OF WOMEN AND CHILDREN.

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ORIGINAL COMMUNICATIONS.

THE PALPATION OF NORMAL OVARIES.¹

BY

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Baltimore, Md.

(With twenty woodcuts.)

DISEASE is a departure from health; health is therefore the standard by which the existence and the amount of disease is to be measured.

Manifestly no man can be considered fit to measure anything who is unacquainted with the standard unit of measure. Yet this has been the course pursued in the development of gynecology. Ovarian cystomata, grossly the most abnormal alterations of the ovary, were first recognized as diseased and attacked, then lesser (in size) pelvic diseases were discovered and operated upon, for a long time before it was established what actually was a normal ovary or a normal tube, the only proper gauge of the existence and extent of disease.

¹ Read before the Baltimore Obstetrical and Gynecological Society, December, 1890.

As a consequence of this error, operations actually unjustifiable have been performed, and the follicles of normal ovaries, and tubes showing a few little sudamina-like papules, have often been exhibited in societies as examples of the triumph of surgical skill over disease.

If scientific gynecology has placed within reach an appeal to the standard, the means of examining the normal ovary before undertaking an operation, it is clear that no man now has a right to enter the ranks of this specialty who has not thoroughly familiarized himself with the palpation of the normal ovary, having mastered all points in the technique of this examination.

Palpation, or examination by indirect touch, is the only accurate means of determining the condition of the ovary in the living subject.

I would begin my paper by laying down this capital proposition : *The normal ovary can always be palpated.*

There are two methods and two avenues of approach by which to palpate the normal ovary—that is, with one hand or with two hands, by the vagina and by the rectum.

An important prerequisite to a careful exploration of the pelvis is to empty both rectum and bladder.

VAGINAL PALPATION WITH ONE HAND.

In examining with one hand by the vagina, the ovary cannot be felt unless it is abnormally displaced downward, having fallen into the recto-uterine pouch, where it may be discovered by pressing just back of the cervix uteri (see Fig. 1) in the median line, or a little to the right or left : a rounded, somewhat elastic body, about the size of the last phalanx of the thumb, slipping up and away under the pressure (see Fig. 1, dotted line). Any attempt with one hand to feel the ovary not thus displaced fails, or gives at the utmost but an uncertain idea of its presence ; because as soon as it is touched it yields to the pressure and is displaced upward and out of reach. An examination of the ovary with one hand is therefore always incomplete and often of little use.

There are three ways of examining the ovary which is normally suspended high up on the posterior face of the broad ligament. Two of these ways are bimanual, and one is tri-

manual, and each method may be employed either per vaginam or per rectum, making thus six in all. They are :

I. *The simple bimanual examination of the organs in situ*, through vagina or rectum and abdominal wall.

II. *The bimanual examination with the uterus in artificial anteflexion-retroposition*, through vagina or rectum and abdominal wall.

III. *The trimanual examination, with the uterus in artificial descensus*, also through vagina or rectum and abdominal wall.

I. THE SIMPLE BIMANUAL EXAMINATION

depends for its success upon the deep displacement of a part of the abdominal wall, in a direction downward, through the

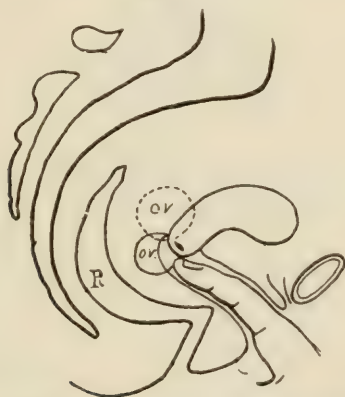


FIG. 1.—Palpation of displaced ovary with one hand.

superior strait, into the pelvis. The pressure must be made on that part of the wall directly overlying the ovary, called the "ovarian region," and continued downward, inward, and forward. The external hand thus employed does not feel the ovary ; it does nothing more than to supply by this pressure a plane of resistance (see Fig. 2), preventing the upward displacement and gliding away of the ovary when touched by the finger of the other hand examining within the vagina. While one hand is thus engaged in making pressure from above downward in the direction of the ovary (see Figs. 2 and 3), the index finger of the other hand is simultaneously introduced up to the fornix of the vagina of the same side (see Fig. 4).

Two acts of the vaginal hand now bring the ovary within reach of the finger; by one of them the vaginal fornix is dis-

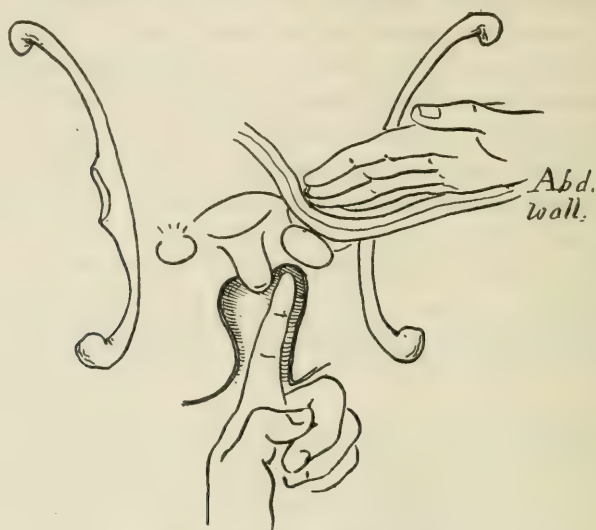


FIG. 2.—Bimanual examination.

placed upward and outward from two to four centimetres

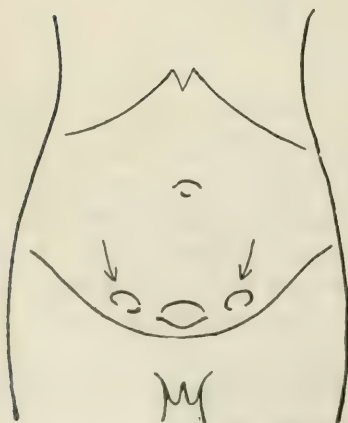


FIG. 3.

FIG. 3.—The arrows indicate the direction of pressure.



FIG. 4.

FIG. 4 shows the index finger unaided and unable to reach the ovary.

(see Figs. 2 and 5). By the other the perineum and the vaginal outlet are invaginated up into the pelvis from four to

six or more centimetres (compare Figs. 4 and 5). *This invagination of the pelvic floor is of the utmost importance, as by this means the examining finger is practically lengthened by the amount of the invagination, or, what is the same thing, the vagina is shortened.*

Invagination is not as simple and easy to practise at first as one would infer from the description. Every one who has practised on the piano knows well that the awkward playing of beginners is largely due to an involuntary fixation of the wrist joint while using the finger muscles. The same difficulty is met here. The great obstacle experienced by a be-

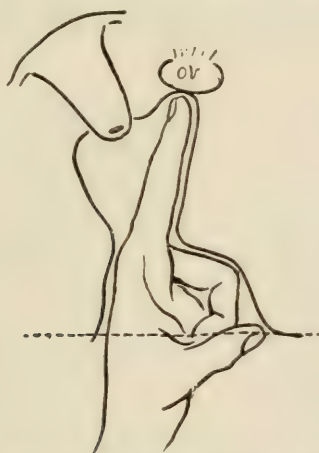


FIG. 5 shows the displacement of the vaginal vault and the invagination of the pelvic floor above the normal (dotted) line. The chief displacement is posteriorly, not lateral as shown.

ginner in thus invaginating the pelvic floor to bring the ovary within easy reach, arises from a faulty rigidity instinctively communicated to the wrist and hand joints. *The pushing must be entirely from the elbow, while the wrist and hand remain perfectly flexible.*

This act will be assisted at first by supporting the elbow upon the brim of the pelvis and pushing with the hip, which relieves the tension on the arm muscles and the liability to a constrained position of the hand and finger.

When the uterus lies in ante flexion, the ovary will often be detected through the antero-lateral vaginal wall in advance of

the cervix (see Fig. 6), and in this position, assisted by the hand above, easily examined by the vaginal finger thus aided; for, instead of escaping at once from the upward pressure of the finger within the vagina, it is met by the plane of resistance offered by the displaced abdominal walls, and against this plane is distinctly felt, and can be subjected to a continued pressure, or even tightly squeezed in the examination if deemed judicious. A little mutual play of the hands working together in this way, at first in one direction and then in the other (see Fig. 7), will thus allow the whole organ to be accurately outlined, completing a very satisfactory examination. When the abdominal walls are rigid and cannot be displaced into the pelvis by the outside hand sufficiently to give

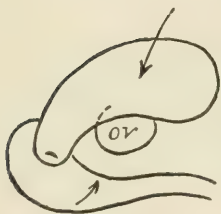


FIG. 6.

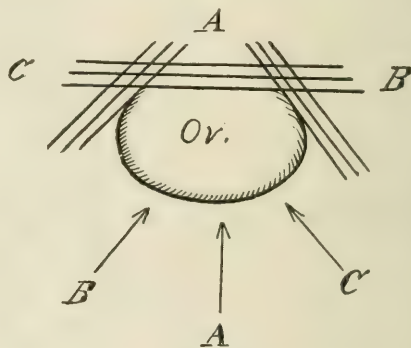


FIG. 7.

FIG. 6 shows the directions of pressure to palpate the ovary in some cases of ante-flexed uteri.

FIG. 7.—The parallel lines A, B, C, represent the abdominal walls displaced downward, first in direction A, then in direction B, and then C, while the vaginal finger at the same time is making counter-pressure in directions A, B and C, and thus determining the size and form of the ovary.

the necessary plane of resistance against which to palpate the ovary, or when the vagina is unusually deep or the examination painful, the object in view can be attained by putting the patient completely under an anesthetic. This produces at once marked relaxation, and the ease with which difficulties previously insurmountable are thus overcome is often astonishing. Such is the simple bimanual examination.

Not to be prolix, I will omit any description of the two remaining methods of examination as conducted per vaginam, because these are more efficiently applied through the rectum, the same rules governing both, *mutatis mutandis*.

THE RECTAL EXAMINATION.

While the examining finger in the vagina is always impeded by the low attachment of the vault of the vagina to the inferior part of the uterus, we have in the rectum, as will be seen by reference to Figs. 8 and 9, a channel in which no such limitation exists.

A rectal examination is conducted in this way :

After thorough evacuation of the lower bowel, the well-oiled index finger is introduced through the anus and carried up behind the uterus, invaginating the pelvic floor, as previously described, until the finger attains the upper third of the pelvis. There is usually some difficulty in finding the passage-way up behind the cervix at the "third sphincter," on ac-

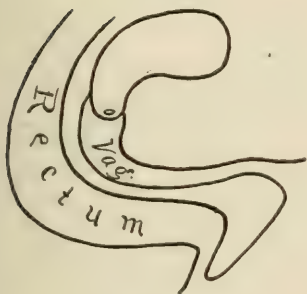


FIG. 8.

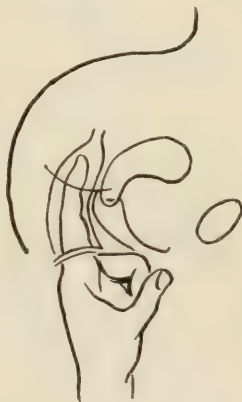


FIG. 9.

FIG. 8 is a diagrammatic representation of the relation of the rectum to the posterior surface of the uterus, showing the advantage of a rectal over a vaginal examination.

FIG. 9 shows the palpation of the posterior surface of the uterus through the rectum.

count of a number of lax folds, just below this point, which catch and embarrass the finger in its effort to discover the smaller communication with the bowel above. This small opening must, however, be gently and patiently sought. When it is found, the finger suddenly slips upward into an apparently free space without limit above. By this means the whole of the posterior surfaces of the uterus and broad ligaments is exposed to touch.

The bimanual examination then begins by using the external hand, as already described, to push down the abdominal walls, keeping the pelvic structures from being displaced

upward out of reach while the palpation by means of the hand within the rectum proceeds.¹

The thin walls of the wide rectum lying immediately behind the uterus afford a ready means of examining minute details of the uterine and ovarian surfaces.

In a rectal examination the pressure from above is to be directed somewhat differently from that in the vaginal examination—starting a little nearer to the anterior wall of the pelvis, and possessing more the motion of scooping the ovary downward and backward within reach of the inside finger.

The ovary is, as a rule, quickly recognized by sweeping the rectal finger, aided as described from above, laterally to the



FIG. 10.

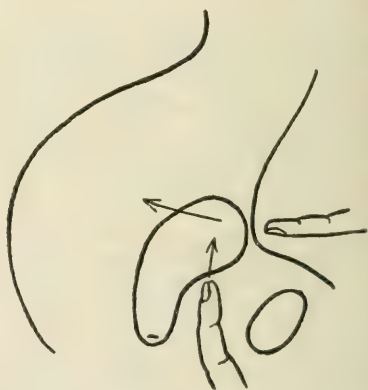


FIG. 11.

FIGS. 10, 11, 12, 13 show the mechanism of the production of an artificial retroposition of the uterus—10, throwing the fundus up; 11, catching the fundus with the outside hand; 12, forcing the fundus back into the hollow of the sacrum, and rotating the cervix forward; 13, the external hand maintains the displacement while the internal finger palpates.

uterus and over the posterior surface of the broad ligament, until the easily displaced but always returning characteristic ovoid structure is found.

It may prove at this juncture that the outside hand is not

¹ With practice and the attainment of great skill the external hand will do much more than is here described. It can actually be used to hand the pelvic structures to the pelvic finger or fingers, and then to play these structures over the sensitive pulp of the vaginal or rectal fingers, while these remain in one place and position. I wish here, however, to speak more of the elementary and the essentials.

bearing down in just the right direction to assist the finger within. A little readjustment to one side or the other corrects this error, when the ovary can be carefully examined in its length and breadth and over its whole surface, even to the extent of detecting distended follicles, pits, or other topographical peculiarities. The finger can also be inserted under the dependent free border of the ovary, and upon lifting it up test its mobility or discover the slightest peritoneal adhesions.

II. BIMANUAL EXAMINATION OF THE UTERUS AND OVARIES IN RETROPOSED ANTEFLEXION.

It happens at times with the best directed efforts that the whole of the posterior surface of the uterus and the ovaries

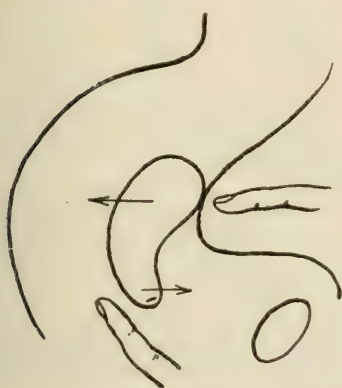


FIG. 12.



FIG. 13.

cannot thus be satisfactorily examined, whether because an ante flexed fundus lies with the ovaries too far forward in the pelvis, or because the individual is so fat or the perineum so unyielding that the finger cannot reach far enough up into the pelvis. A satisfactory examination will be secured under these circumstances by making a different use of the external hand—pushing the uterus back into a temporary artificial retroposition, and by this means bringing the body with its lateral structures within easy touch.

The technique of this artificial retrodisplacement is the following: The fingers are thrust down behind the symphysis and an effort made to catch the fundus and push it over backward. If this does not succeed, the index finger of the oppo-

site hand is introduced within the vagina, throwing the fundus up and within reach of the outside hand (Fig. 10), which catches it (Fig. 11) and glides down on to the anterior face of the uterus (Fig. 12), and, keeping up the backward pressure, the retroposition is completed (Fig. 12) by forcing the uterus into a reclining position in the sacral hollow. (See Figs. 10, 11, 12, 13 and description.)

If now, with the uterus thus artificially displaced, we introduce the examining finger high up into the rectum in the manner already described, while continuing the downward pressure from above (see Fig. 13), the clearness with which the posterior surface of the fundus uteri, and even a part of



FIG. 14 illustrates the palpation of two small fibroid tumors on the posterior face of the uterus, which is in artificial retrodisplacement.

the anterior face of the uterus, can at once be felt, is practically equal to a digital examination of the naked uterus through an abdominal incision. By this means I have detected two fibroid tumors on the fundus and posterior surface of the body of the uterus, one of which was as big as, and the other not quite as large as, a pea (Fig. 14).

But even here conditions may exist under which it will be difficult to discover the ovary—when, for example, it is unusually small, or when an exudate covers in the ovary on the broad ligament, or when there is some involvement of both ovary and the fimbriated end of the tube in a common inflammatory process. A concealed or uncertain mass, under these circumstances, may demand some more crucial test than its

resemblance in form and consistence to establish its identity. Such an *infallible guide exists in the utero-ovarian ligaments*, which can be recognized as well-defined, prominent bands of tissue forming a prominent ridge on each side of the posterior surface of the broad ligaments near the fundus uteri. The quickest way to find this ligament is to run the finger, beginning at the cornu uteri, down the side of the uterus at its broad-ligament attachment. Two prominent folds are thus discovered on each side—the upper one, of which we are speaking, about one-fourth way down, and a lower sharp fold in the cervical region; this latter is the utero-sacral fold sweeping back towards the sacrum (see Fig. 15).

Taking this upper, the utero-ovarian fold, as a leader, and

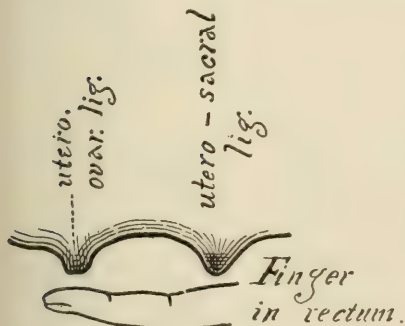


FIG. 15.

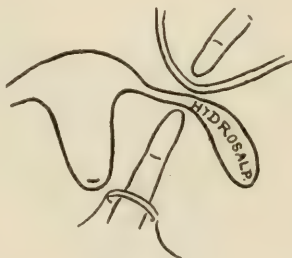


FIG. 16.

FIG. 15 shows the two ridges felt in the broad ligament lateral to the uterus; the uppermost is the utero-ovarian ligament.

FIG. 16 shows how it is possible to palpate a small hydro-salpinx in this way per rectum.

following it with the finger out from the uterus from one and a half to two and a half centimetres, it there widens out into a hard body which is always the uterine pole of the ovary. If this body is but ill-defined, or more or less fixed, or continuous with an indistinct mass laterally, the evidence of the involvement of the ovary in pelvic peritoneal inflammation is established.

We can also make another use of the ovarian ligament and the cornu uteri by taking them as guides to the top of the broad ligament, about one and a half centimetres above, where there is no doubt that the little, elongate structure there felt, parallel to the ovarian ligament, and gliding so readily between the finger within and the depressed opposed abdo-

minal wall, is the Fallopian tube, which can often, in its normal condition, be traced out along the top of the broad ligament towards its ampullar end. The slightest thickening makes the whole tube at once easily palpable. I have in this way detected a hydro-salpinx where the tube has not contained more than three or four centimetres of fluid (see Fig. 16).

III. THE TRIMANUAL EXAMINATION WITH ARTIFICIAL DESCENSUS UTERI.

We now come to a third alternative in the methods of examination, which I have called *the trimanual* because it em-

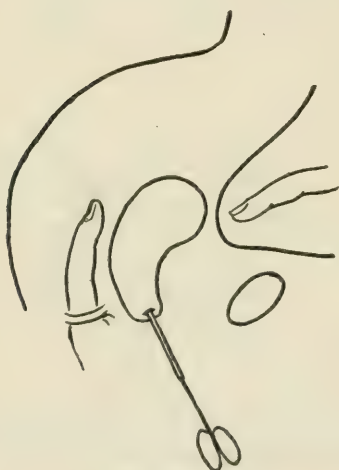


FIG. 17.

FIG. 17 shows the uterus brought down within easy reach of the rectal finger by traction on the cervix.

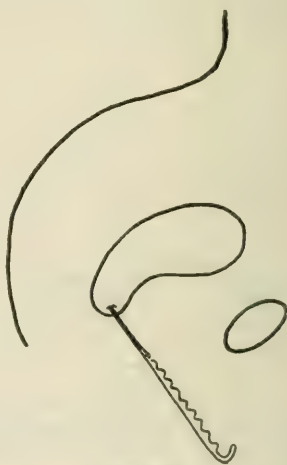


FIG. 18.

FIG. 18 shows the corrugated tenaculum hooked into the anterior lip of the uterus, preparatory to bringing it down towards the vaginal outlet.

ploy three hands. The essential feature here is the fact that the normal uterus will bear a displacement downward, or, more literally, a forced descensus, until the cervix appears at the vaginal outlet, without any damage from traction upon the intrapelvic supports.

The trimanual examination is conducted in this way: Catching the anterior lips of the cervix with a pair of bullet forceps or a tenaculum, it is drawn slowly down without resistance towards the vaginal outlet. An assistant takes the tenaculum, holding the uterus just at, or from one to two centi-

metres above, the vaginal outlet, while the operator makes a bimanual examination through the rectum and abdominal walls upon uterus and ovaries thus subjected to the maximum downward displacement (see Fig. 17). The facility with which the uterus and its adnexa can thus be reached is even greater than by the preceding method.

To obviate the awkward necessity of employing an assistant to hold the uterus down while making this examination, I have invented a tenaculum to be hooked into the cervix and drawn down, the handle of the tenaculum being grasped in the pelvic hand between the ball of the thumb and the last

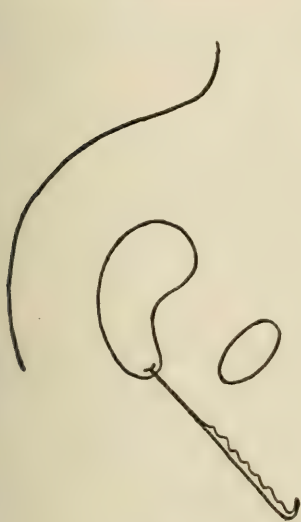


FIG. 19.



FIG. 20.

FIG. 19 shows the uterus brought down to the vaginal outlet by means of the corrugated tenaculum.

FIG. 20 shows how the corrugated tenaculum may be grasped in the same hand which is engaged in examining the uterus through the vagina or through the rectum, while the outside hand depresses the abdominal walls, assisting in the palpation of ovaries and tubes. In this way two hands do the work of three.

phalanges of the second and third or third and fourth fingers, or, in a rectal examination, it may simply be held between the dorsal surface of the third and the palmar surface of the fourth fingers. This leaves the index finger of the same hand perfectly free to make the examination with the usual assistance of the abdominal hand above (see Figs. 18, 19, 20).

To get a good hold on the tenaculum, I have made it flat

and corrugated, calling it from this the corrugated tenaculum. I make constant use of this little instrument, finding that it assists me most of all in examining young women.

Thus by one or other, or several of these methods in succession, the uterus, the broad ligaments, the ovaries, and the tubes are within reach of a most thorough and searching examination, revealing at once the smallest abnormalities. Ought not every gynecologist to be well posted in this matter?

A PLASTIC OPERATION DESIGNED TO STRAIGHTEN THE ANTEFLEXED UTERUS.¹

BY

E. C. DUDLEY, M.D.,

Professor of Gynecology, Chicago Medical College,
Chicago, Ill.

(With seven woodcuts.)

A COMPREHENSIVE study of pathological antelexion would have to take into account those abnormal conditions which belong to it, and which may have the relation of cause or of effect, or be a concurrent result of some common cause. This paper, however, is limited to the consideration of a plastic operation designed to straighten the antelexed uterus.

A distinction between normal and pathological antelexion would show that an essential factor in the former is mobility at the angle of flexure, which permits the degree of flexure to vary within certain defined limits. The limit of normal antelexion, according to Schultze, is 48°. Fritsch says 90°, and he may be right. The variation is somewhat commensurate with the varying quantity of fluid in the bladder.

If the body of the uterus rest upon the bladder, it must rise as the bladder becomes distended; and, conversely, if the urine be drawn through a catheter while the woman is lying

¹ Read, by invitation, before the New York Obstetrical Society on November 18th, 1890.

on her back, the uterus, notwithstanding the opposing influence of its own weight, immediately follows the receding wall of the bladder and returns through an angle of 48° , or possibly even 90° , to its accustomed position. The dotted lines in Fig. 1 indicate the degree of normal version and flexion consequent on the varying quantity of fluid in the bladder.

When the flexure has gone beyond the normal limits and become pathological, two principal results may occur, especially if there be immobility at the angle of flexure :



FIG. 1.

1. Collapse of the blood vessels at the angle of flexure, with consequent obstruction to the circulation, passive congestion, and hypersecretion of a vitiated mucus.

2. Collapse and obstruction of the uterine canal at the angle of flexure, with consequent retention of this vitiated secretion, which may decompose and become a potent source of irritation, so that the uterine mucosa can neither produce its normal menstrual decidua nor furnish a safe resting place for the impregnated ovum.

The symptom-group, therefore, of this class of cases generally includes uterine catarrh, dysmenorrhea, and sterility. Fig. 2 represents such a pathological anteflexion.

As the fecal matter passes the cervix during defecation, a force is applied to its posterior wall in the direction of arrow A. At the same time a fixation of the abdominal muscles which involuntarily goes with the least straining, whether in urination or defecation, results in a force upon the corpus uteri in the direction of arrow B. Thus the flexure is increased and perpetuated with each act of defecation or urination.

The mechanical indication clearly is to straighten the uterus, so that :

1. It may be out of range of the forces above mentioned.
2. The circulation may be relieved.

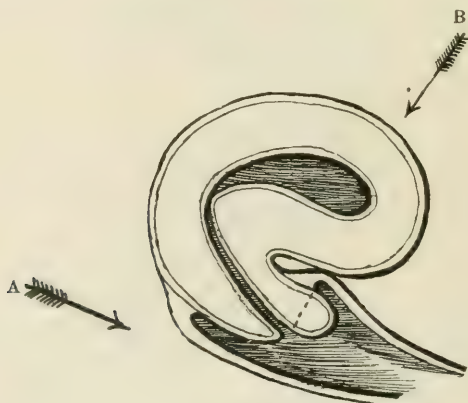


FIG. 2.

3. The uterine canal may perform its function as a drainage tube.

The mechanical treatment of this displacement includes four well-known procedures :

1. Division of the cervix.
2. Dilatation of the uterine canal.
3. The use of electricity.
4. The application of the stem pessary.

Posterior division of the cervix often gives relief by shortening and straightening the uterine canal, but it leaves the uterus still flexed—that is, it overcomes the obstruction in the uterine canal, but not in the blood vessels. Moreover, the divided cervix is prone to reunite and leave a cicatricial con-

traction at the os externum. The operation is in the right direction, but it is inadequate.

Dilatation of the uterine canal, whether by tents or by steel instruments, is disappointing in a large proportion of cases, both in straightening the uterus and in relieving the symptoms; and when the procedure has been followed by good effects, these have not been as permanent as one could desire. Besides, tents are dangerous, and moderate, forcible dilatation has in my hands twice resulted in an alarming rupture of the uterus, although in neither case did any serious consequences follow.

Electricity is also a very useful agent, but not by any means

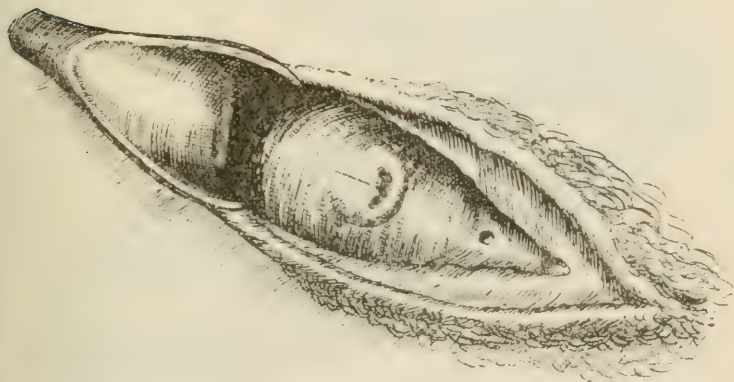


FIG. 3.

effective enough to stand alone as the accepted treatment of pathological anteversion.

The intra-uterine stem pessary has properly been called a "good thing to watch."

These methods having been unsatisfactory, I have devised the plastic operation about to be described, which has been performed in the fourteen cases tabulated below.

The operation is performed as follows: Everything connected with the operation has been rendered surgically clean. Under ether the uterus is exposed by Sims' speculum. The uterine canal is dilated, by means of a Palmer's or a light Ellinger's dilator, sufficiently to permit the introduction of a small, dull spoon curette. The object of the curettement is to re-

move any granulations which may give rise to hypersecretion or to menorrhagia. The endometrium is then thoroughly irrigated with hot sterilized water.

Then the cervix is divided with scissors backward in the median line considerably past the utero-vaginal attachment, as shown in Fig. 3.

The cut surfaces on either side are held apart by means of two tenacula, one in the hand of the operator, the other in the hand of an assistant, while the incision is somewhat deepened by means of a scalpel, especially on the side of the cervical canal. On each side the surface thus incised is now

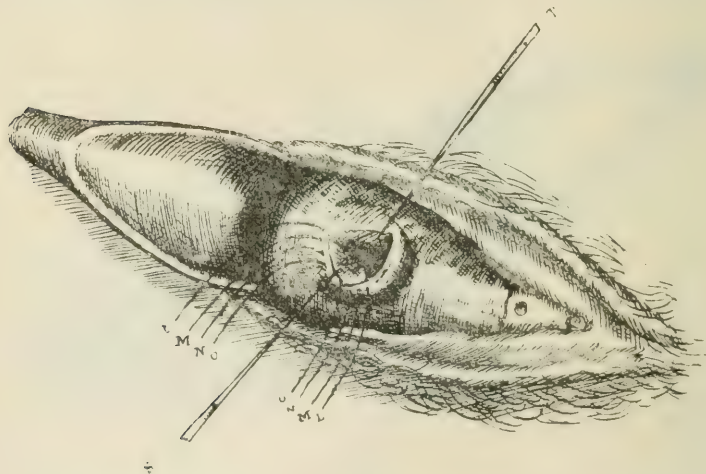


FIG. 4.

folded upon itself and secured by silkworm-gut sutures, as shown in Figs. 4 and 5. These sutures are not introduced in such a manner as to stitch the intracervical to the vaginal margin of the cut surface, but the cut surface is folded upon itself in a direction at right angles to this—*i.e.*, on either side of that point at the margin of the os externum where the backward incision commenced—and is stitched to the very angle of the incision, so that the cut surface is folded upon itself, not from within outward, but from before backward. Thereby the os externum is carried directly back to the angle of the incision.

Already the cervix has commenced to point backward in

its normal direction toward the hollow of the sacrum, instead of forward toward the vaginal outlet (see Fig. 5).

Then the anterior lip of the cervix is caught with a ten-

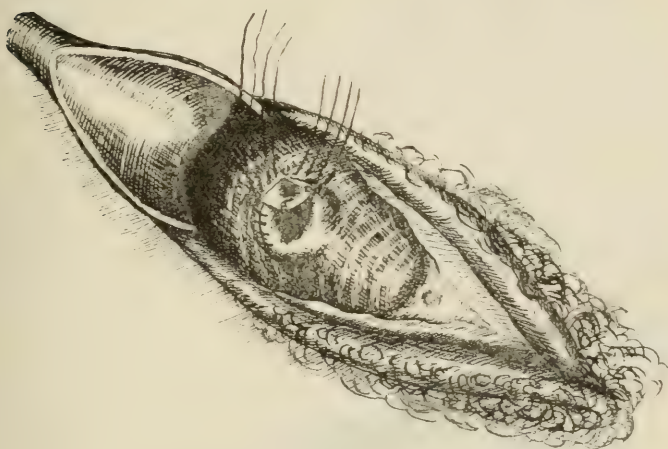


FIG. 5.

aculum and partially removed, as indicated by the dotted lines in Fig. 2, which shows a sectional view of the incision.

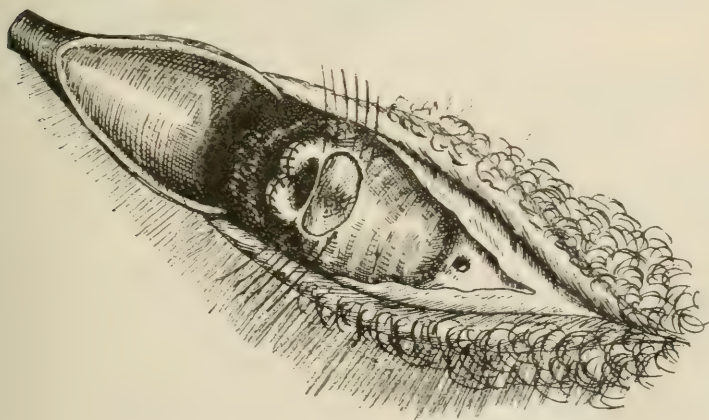


FIG. 6.

This incision should extend to the os externum, but not into it.

Fig. 6 shows the incision with sutures in place, for the

purpose of folding the exposed surface upon itself from side to side.

The removal of a portion of the anterior lip is not only not a mutilation, but it may even correct a deformity, because in antelexion the anterior lip is often elongated in consequence of the relatively greater pressure exerted upon the posterior lip by the posterior vaginal wall.

Fig. 7 shows the sutures all tied and the operation complete.

Conjoined examination upon completion of the operation in each of my cases has invariably shown the uterus either to have been straightened or the antelexion to have been

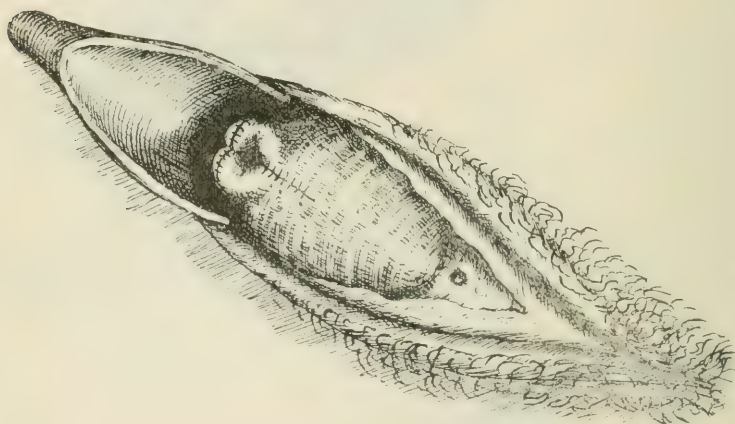


FIG. 7.

reduced quite within physiological limits. The results have been substantially the same whether the point of flexure was at the os internum or below it.

The two posterior lines of sutures have the effect of transplanting the os externum to the very angle of the posterior incision. The anterior sutures have the effect of carrying the cervix back by a distance equal to one-half the length of the anterior cut surface which has been doubled upon itself. By this means a permanent change is effected in the direction of the cervix, which is quite equal to overcoming the flexure. As the result of the anterior portion of the operation, the uterus is lifted also to a higher plane in the pelvis, where it ceases to be a mechanical irritant to the bladder.

I have not operated for the reduction of antelexion in the very small, undeveloped uterus. The contra-indications for the operation would in general be the same as in other operations upon the uterus.

On pages 150 and 151 is a tabulated statement of the fourteen cases in which I have performed this operation.¹

The results are classified under two columns, one for the mechanical and one for the symptomatic results. My own 14 cases and Dr Watkins' 4 cases would seem to establish the fact that the operation fulfils the mechanical indication. But its value as a therapeutic measure cannot be determined until after a more extensive observation of the symptomatic results than is now possible.

Of my own 14 operations, 1 was performed only a few days ago, and the symptomatic results therefore are not yet known. In 1 case the results were negative, in 1 there was improvement, and in 1 symptomatic relief followed, but not until forcible dilatation of the sphincter ani muscle. It is difficult to understand how this procedure could have relieved the dysmenorrhea, but I have classified the result as uncertain.

In 10 cases the symptoms have been relieved, and, so far as I have been able to obtain information, the relief has been continuous.

In 4 of my cases one of the indications for the operation was sterility, but in the few weeks or months since operating conception has not occurred. However, these patients have all been relieved of other disabilities.

I trust the Society will not understand me as having presented this operation as a panacea for all the maladies of pelvic origin in which there happens to be a pathological antelexion. Undoubtedly the cases must be very numerous in which the antelexion is rather an incidental than an essential factor.

My hope is that the operation may prove of value when the indication to be fulfilled is wholly or in part mechanical.

¹ To this list of cases may be added four more in which the operation has been performed by Dr. T. J. Watkins, of Chicago, who informs me that his results are substantially the same as my own.

TABULAR STATEMENT.¹

NO.	NAME.	DATE.	MECHANICAL INDICATIONS.	SYMPTOMATIC INDICATIONS.	MECHANICAL RESULTS.	SYMPTOMATIC RESULTS.
1	Miss J. W. M.	August 27th, 1889.	Very acute antelexion at internal os.	Dysmenorrhea	Cure	Negative until a few months after operation, when forcible dilatation of sphincter ani muscle was followed by entire relief.
2	Miss A. H. . . .	August 28th, 1889.	Acute antelexion at internal os.	Cephalalgia, dysmenorrhea.	Cure... ..	About eight months after operation Dr. S. M. Wylie, of Paxton, Ill., reported a cure.
3	Mrs. J. F. . . .	October 22d, 1889.	Very acute antelexion between internal and external ora.	Sterility, dysmenorrhea, uterine catarrh.	Cure	Dysmenorrhea and the uterine catarrh have remained cured for one year, that is, up to the present time.
4	Mrs. H. M. R.	February 23d, 1890.	Acute antelexion at internal os.	Sterility, dysmenorrhea, backache.	Cure	Dysmenorrhea and backache cured.
5	Mrs. W. P. M.	April 8th, 1890.	Acute antelexion at internal os.	Uterine catarrh, pelvic pain, backache, sterility.	Cure	Uterine catarrh, pelvic pain, and backache cured.
6	Mrs. J. A. K.	April 12th, 1890.	Very acute antelexion at internal os.	Dysmenorrhea, cephalalgia, neurasthenia.	Cure	Dysmenorrhea and cephalalgia have remained cured since operation. General health improved.

¹ In the cases marked "very acute antelexion" the cervix and corpus uteri were almost parallel.

NO.	NAME.	DATE.	MECHANICAL INDICATIONS.	SYMPTOMATIC INDICATIONS.	MECHANICAL RESULTS.	SYMPTOMATIC RESULTS.
7	Miss L. J. . .	April 23d, 1890.	Acute anteflexion at internal os.	Dysmenorrhea	Cure	Nurse reports that patient menstruated once without pain; later information not obtainable.
8	Mrs. O. M. . .	April 27th, 1890.	Acute anteflexion at internal os.	Uterine catarrh, sterility, pelvic pain, backache, neurasthenia.	Cure	Uterine catarrh, pelvic pain, and backache cured; patient considers herself well.
9	Miss L. M. . .	May 13th, 1890.	Acute anteflexion between internal and external ora.	Dysmenorrhea, menorrhagia, uterine catarrh.	Cure	All symptoms entirely relieved, and general health much improved.
10	Miss B. A. S. .	May 17th, 1890.	Acute anteflexion at internal os.	Dysmenorrhea, uterine catarrh, neurasthenia	Cure	Negative.
11	Mrs. C. B. . .	October 1st, 1890.	Very acute anteflexion at internal os.	Dysmenorrhea	Cure	Has menstruated once since operation, but with only partial relief.
12	Miss E. S. . . .	October 24th, 1890.	Acute anteflexion between internal and external ora.	Dysmenorrhea	Cure	Two weeks after operation menstruated without pain.
13	Miss M. F. . .	October 29th, 1890.	Very acute anteflexion between internal and external ora.	Dysmenorrhea	Cure	Has menstruated once without pain.
14	Miss E. P. . . .	November 12th, 1890.	Very acute anteflexion between internal and external ora.	Dysmenorrhea, uterine catarrh.	Cure	Has not menstruated since operation.

CONCEALED ACCIDENTAL HEMORRHAGE DURING LABOR,
WITH A REPORT OF A FATAL CASE.¹

BYHENRY C. COE, M.D..
New York.

THIS accident is so rare, especially under the conditions mentioned in the title, that the writer feels that he owes it to the profession to report a fatal case, the circumstances attending which rendered it the most distressing that it has ever been his misfortune to witness. The patient was a primipara, age 20, in excellent health, and with a perfect family history. She was of a highly nervous temperament, and suffered from dysmenorrhea before marriage, due to ante flexion and cervical endometritis. She became pregnant within a few days after her marriage, and, after the usual disturbances of the early months, felt better than she had as a girl. She was carefully prepared for her accouchement, and no local or constitutional trouble was ever discovered. During the last few weeks of pregnancy she was disinclined to take exercise on account of backache and pains in the lower limbs, but her appetite was unusually good and all her functions normal. A thoroughly reliable nurse was with her for ten days before her confinement. On the evening of September 6th she began to have fugitive pains, and I was called to see her at 9 o'clock. I found her in good condition, with such slight pains that I felt some doubt as to whether labor had actually commenced. She was quite stout, so that her abdomen was unusually prominent. Palpation revealed nothing abnormal; the fetal heart was distinctly heard. The head was presenting in O. L. A., the os barely admitting the finger-tip. The lower uterine segment was dilated, and the head, which was large, was low down. I advised the patient to sit up and walk about, and returned home for my obstetric bag. I saw

¹ Read at a meeting of the New York Obstetrical Society, December 2d, 1890.

her again an hour later, and found the situation practically unchanged, the pains being slight and irregular. I predicted that the first stage would be prolonged, but saw no indication of any abnormality. As the patient was nervous and hyperesthetic, I refrained from frequent examinations. During the next three hours the pains became more severe and were located in front below the umbilicus; but I noticed that the uterus contracted imperfectly, while dilatation was slow. Warm vaginal douches and opium were given, with the view of relaxing the rigid os. The patient was up and about at intervals, with a good pulse, and the fetal heart was heard. At 3 o'clock in the morning some progress had been made, but the pains were still inefficient, and she was very nervous and uneasy. She complained of a constant pain in the lower part of the abdomen, but, as she had always been hyperesthetic, I could not discover any spot which was particularly sensitive. As her pulse was good and she was inclined to sleep, I left her in charge of the nurse, and took a short nap. I was called by the nurse at half-past 5 o'clock, as the patient had had a slight hemorrhage. On examination the os was found to be about half-dilated and the head firmly engaged, the membranes being intact. The pains had become stronger and had assumed the character of true labor pains. On palpating the abdomen I was at once struck with the fact that the uterine tumor was larger and softer than at my previous examination, and that I could not map out the fetal parts as distinctly as before. The patient's pulse was accelerated, but not especially diminished in volume. She expressed herself as feeling weak. I was unable to hear the fetal heart, and at once stated to the family that delivery ought to be speedily accomplished in the interest of the child. At the same time a suspicion entered my mind that a hemorrhage might be taking place into the uterus. I sent for Dr. E. H. Grandin, who arrived within forty minutes. While I was in an adjoining room writing a note to him, the patient was allowed to use the commode, and while so doing had a profuse hemorrhage. Strong bearing-down pains now began. I ruptured the membranes, and, after giving a stimulant, used chloroform for the first time. The head descended rapidly, and when Dr. Grandin arrived dilatation was complete. He promptly confirmed

my suspicion and advised immediate delivery, as the pulse had become much weaker. Ether was substituted for chloroform, the forceps was applied, and a large dead child was quickly delivered. Dr. Grandin (to whom I feel under the deepest obligations for his admirable assistance) maintained compression of the uterus, and at once expelled the detached placenta, several large clots, and over a pint of fluid blood. All the means of arresting hemorrhage were at hand. As the uterus remained flabby, manual compression, ice, intra-uterine injections of hot water, solutions of vinegar and subsulphate of iron, were resorted to in rapid succession, accompanied by hypodermic injections of ergot, digitalin, nitroglycerin, whiskey, and ammonia. The uterus contracted, but again relaxed, whereupon intra-uterine faradization was tried. The abdominal aorta was compressed and Esmarch's bandages were applied. There was not excessive external hemorrhage, but the uterus remained relaxed, and several clots were removed from it. The patient's pulse had become so alarmingly weak that hot rectal injections of whiskey and salt solutions were given, with frequent hypodermics. There was no time to procure tampons, and the hemorrhage had now ceased, so that we concentrated our efforts upon reviving the flagging heart, but without success. Dr. Fordyce Barker had been sent for, but did not arrive until the patient was breathing her last. She died about an hour after delivery.

Examination of the child showed that it was a fully developed male, weighing at least nine pounds, with a large head which Dr. Grandin considered as hydrocephalic. The placenta was the seat of general fatty and calcareous degeneration. Owing to force of circumstances it was unfortunately thrown away before a minute examination could be made to determine, if possible, the point at which the detachment began.

Several questions naturally suggest themselves in connection with this sad case, and the writer will feel greatly obliged if the Fellows will comment upon them freely and unreservedly. Among these, the one which has most often recurred to his mind is this : Could the accident have been foreseen, and was any indication of the occurrence of the same overlooked previous to the first external hemorrhage and the sudden accele-

ration of the pulse? The only symptom which was suspicious was the absence of strong labor pains and the constant pain in the lower portion of the abdomen; still I cannot regard this alone as an evidence that hemorrhage was taking place all night, since the patient's pulse gave no indication of danger until I was called in the morning. The nurse, who has had a long training in the after-treatment of laparotomy cases, was confident that there were no signs of internal bleeding before she called me, and, indeed, until the patient arose from her bed to use the commode. Granting, as we must, that the placenta had begun to be detached some time before blood escaped per vaginam, the loss had hitherto been so slight as to give no clue to the true condition of affairs. May not the entire placental detachment have occurred while she was up?

In this case we must note the following departures from the usual history:

The patient was a healthy primipara. The accident is rare in primiparæ, as compared with multiparæ, in the ratio of one to eight.

No cause could be discovered, aside from the condition of the placenta and the irregular contraction of the uterus.

Signs of internal hemorrhage were late in appearing, since they *followed* rather than *preceded* the profuse external effusion. No blood escaped externally from the time the membranes were ruptured until after the child was delivered.

As regards the management of the case, when the diagnosis was established the os was half-dilated and the head was engaged. To have attempted version then would have been unwise. No time was lost in delivering with the forceps. It should be noted that even before the os was dilated the head was firmly wedged; the distended uterus might easily have been ruptured if version had been attempted at this time, the child being large. However, in another case I would certainly take the risk.

The history of the case justifies Goodell's inference that the cause of death in these cases is not alone the loss of blood, but is also the shock incident to the sudden and excessive distention of the uterus. My patient's heart showed signs of failure before the post-partum oozing began. Atony

of the uterus was clearly a result of the hyperdistention. The amount of blood lost in consequence was not excessive, but it was enough, added to the previous hemorrhage and shock, to destroy her life. Every preparation should be made before delivery in these cases to arrest the inevitable post-partum bleeding.

Delay in this case, as is still counselled by some writers, would simply have resulted in the patient's dying undelivered. I am firmly convinced that the only chance of saving the mother lies in emptying the uterus as soon as possible.

If there is any one lesson more than another which should be learned from this case, it is this: The most rare and serious complication may occur in any patient and at any stage of the labor. Long exemption from accidents renders us too confident. Our next case may be our worst. It may be, as in my unfortunate experience, in a home of wealth and refinement; it may be in a tenement house. The practice of obstetrics is a serious business, calling for something more than a blind confidence in the powers of nature. Frequent palpation of the abdomen, auscultation of the fetal heart, attention to the mother's pulse, an earnest scrutiny of all the phenomena of labor, though they are such an old story to us—these precautions can alone prevent us from being surprised and overwhelmed, as I was, by a sudden and unlooked-for calamity.

While no one would be so presumptuous as to expect to improve upon Goodell's classical paper on "Concealed Accidental Hemorrhage in the Gravid Uterus" (*AMERICAN JOURNAL OF OBSTETRICS*, August, 1869), I hope at a later day to be able to supplement it by adding to his list of one hundred and six cases those which have been reported during the past twenty years. So far as my researches have extended, nothing is to be added to the deductions which he draws, no new light having been thrown upon the etiology, symptomatology, or treatment of this, the most fatal of all uterine hemorrhages.

It is curious to note how generally later writers on this subject have overlooked his exhaustive paper. Thus Brunton (*British Med. Journal*, 1871), writing two years after its publication, says that no cases of accidental hemorrhage had been recorded for ten years! He had been able to collect

only thirty-two in all, in twenty-six of which the cause was "irregular uterine contractions." He reports four cases of his own (without details), in which all the mothers recovered, due, he thinks, to the fact that he did not rupture the membranes until dilatation was complete. As he expresses it, he "rallies the patient until sufficient relaxation of the parts has taken place to facilitate rapid, but not too rapid, delivery." But all the evidence shows that most of the women who have died undelivered were treated in precisely this dilatory way.

[As the writer is engaged in the preparation of an extended paper on this subject, he will be greatly obliged to the profession for reports of similar cases of serious hemorrhage due to premature detachment of the placenta, especially those occurring *during labor at full term*.]

27 EAST 64TH STREET.

THE INFLATED-RING PESSARY: ITS APPLICATION AND RESULTS.¹

BY

SARAH E. POST, M.D.,

New York.

WHEN one has advanced a suggestion, especially if that suggestion has been received with a certain amount of consideration, I think that the originator of the suggestion has a further duty. I think that it is his duty, after the lapse of a certain time, to acquaint his audience with the results of his riper experience; to let his audience know whether the remedy has continued to be a success, or whether it has become a failure in his hands. This belief is my excuse for bringing before you again the subject of the possible uses of the old inflated-ring pessary.

In the New York *Medical Record* of January 18th, 1887, and again in the New York *Medical Journal* of September 24th, 1887, I detailed a number of cases which had been bene-

¹ Paper presented to the Alumnae Association of the Woman's Medical College, December 17th, 1890.

fited by the use of this ring. These cases were, first, cases of fissured cervix with eversion and catarrh. The pessary in these cases seemed to act as the elastic bandage upon varicose ulcers elsewhere, diminishing the engorgement and promoting healing without any other treatment. After the patient had worn the ring for a few weeks, the everted parts would be found to have assumed their normal relations, often being then separated by merely a vertical slit. The improvement obtained in these cases was more rapid than from any other non-operative treatment, and persisted for at least a number of months.

The second class of cases for which the ring was recommended were cases of stubborn retroflexion—retroflexions which it was found impossible to support by a hard-rubber lever pessary. Such cases are the two following :

Mrs. —, 45 years of age, of good social position, and previously treated by a number of prominent gynecologists, had been an inmate of one of the private hospitals of the city for some time. She was seen by me in the early part of last winter. With an appearance of blooming health, she was highly hysterical, was constantly in tears without apparent cause, and was afraid even to go upon the street alone. She had no direct symptoms of uterine trouble, but said that she had had gynecological treatment and that she had at several different times worn pessaries, which had always exaggerated her nervousness. Examination showed a large, retroflexed uterus having a tender point just at the angle of flexion. The behavior of the patient led me to locate this point as a hysterogenic area. Two distinct sulci in this case marked the lines at which two separate pessaries had embedded themselves in the still retroflexed organ. Just here I find my great objection to the hard lever pessary. If not watched, the heavy body is apt again to fall back over the posterior bar, and the last condition of the patient be worse than the first.

In this case galvanic applications were made through the sensitive area, and the body was replaced, at first with tampons, and later by the use of the inflated ring. The sensitiveness entirely disappeared, and the patient is now wearing a hard-rubber lever pessary and is passing through the suppres-

sion of the menopause with a tolerable degree of comfort. The mental symptoms have not returned.

Another case is that of a working girl who presented herself at the Demilt Dispensary several years ago for vertical headache and a sense of loss of mind. She still periodically presents herself with the old symptoms. She invariably enters the examining room with the remark, "O doctor, I am going crazy sure this time." It is useless to talk to her, to reason with her, when she is in this state; she is not amenable to reason. But to the question, "Where is your ring?" her usual answer is, "It is in my pocket," or, "It is at home." This girl has a sharply retroflexed uterus. Apparently it cannot be supported by a hard-rubber ring. Again and again it has fallen over the posterior bar. With a well-fitted inflated pessary the body is lifted to a position at a right angle to the cervix and the discomfort is relieved. The patient now menstruates without pain, she eats and sleeps well, the color comes into her cheeks, she gains weight, and her mental symptoms disappear. Let the ring collapse, however, or let her become careless in regard to its application, and she becomes again haggard, pale, anemic, and melancholy.

The third class of cases for which I advised the inflated ring were cases of ovarian prolapse. It is a curious fact that we do not find so many prolapsed ovaries as we used to, since we have learned to recognize disease and prolapse of the tubes. Still such cases do exist. I held, four years ago, that prolapsed ovaries were painful, not on account of their inflammations, as a rule, but on account of their prolapse and compression; and, further, that a prolapsed ovary, supported, was a comfortable ovary, even though considerably congested and diseased; further, that a prolapsed ovary, supported for one or two years, would spontaneously take on a healthier action, as a rule, and that its suspensory ligament would in that length of time recover its tone and support be no longer required. A longer experience has but confirmed me in this view. The majority of prolapsed ovaries need only patient, protracted treatment. For this persistent support I still know nothing equal to the inflated ring.

The fourth class of cases, often complicated with that to which reference has just been made, is the class of salpingitis

with prolapse of the tubes. Mr. Tait refers to this class of cases in distinction to cases of pyo-salpinx, hemato- and hydro-salpinx, as "those who suffer most, presenting, as they do, adhesions between the ovaries and tubes and the surrounding viscera, and more particularly the peritoneal layer lining Douglas' pouch, and resulting often in a complete retroversion of the uterus and appendages—one of the most dreadful conditions with which the gynecologist has to deal, and yet so obscure in their indications, often, that it is difficult for the unskilled pathologist to see that there is anything the matter with them." In my previous papers I asserted that with persistent treatment, first with hot douches and iodine and glycerin or boroglyceride to reduce the sensitiveness, and later by the use of the inflated ring, these cases might be practically cured. I suggested that the adhesions which bound the tubes gave way under the gentle but forcible pressure of the ring. I still believe that this is precisely the course followed by such a case thus treated.

The classic signs of simple chronic salpingitis are given as a dull aching or gnawing pain, radiating from the pelvis into the groins, exacerbated at the periods when fluid escapes. 2. Profuse, irregular hemorrhages. 3. Constitutional impairment. 4. Sterility. In addition I have found these cases afflicted by a peculiar nervousness, shown by confusion of thought, fear, and headache in some cases. Mere pain will not invalid a woman. Hemorrhages alone, unless profuse enough to threaten life, will not interfere with her intellectual or psychic equilibrium. Constitutional infection may be borne, and the cachectic woman work on at her appointed task. But these cases of salpingitis present symptoms which are most disturbing to the woman's whole economy. The woman is unhappy, depressed, anxious, or restless. A hundred forms are taken by this nervousness.

Physical examination in these cases may show little beyond thickening of the floor of the posterior cul-de-sac and shallowness of the posterior vaginal vault, the roof of which seems narrowed. The cervix may or may not be drawn backward and fixed. In other cases, after eliminating rectal accumulations, you have still the sensation of something beyond the finger in Douglas' pouch: you may get a confused sense of

several bodies forming an adherent mass; and in still other cases you may be able clearly to outline your prolapsed ovary and tube, and tell to which side each belongs. Tait tells us that the main difficulty in diagnosis lies in differentiating the prolapsed tube from an adherent coil of intestine. For a diagnosis, I think, however, that the history of the case helps. The treatment in the two conditions would be the same. You will notice that I do not pretend always to be able to tell what I have in the cul-de-sac. I do think, however, that I am able to tell that I have something there which should not be there; also that it is adherent, and whether or not contraction of the adhesions is present.

The peculiar suffering of these cases is, I believe, due to compression and friction exerted upon the fimbriated extremity of the confined tube. If, in one of these cases, active inflammation supervenes, and the tube is distended so as to lift the fimbriated extremity out of the hole into which it has fallen, as a rule the pain and nervousness cease. Many of you have remarked that the pain of salpingitis is due to the adhesions rather than to tubal distention or disease. The nervousness seems to me peculiarly associated with the fimbriated extremity and its irritation. When prolapsed behind the uterus one can readily understand the friction to which it will be subjected between the often over-full rectum and the uterus. In this way I explain the difficulty in walking which is in my experience universal in these cases. A further proof of my theory lies in the immediate relief which support gives. Lift the cul-de-sac so that the adherent tube is beyond this constant source of friction, and the patient walks at once. I will detail three cases:

Mrs. —, 34 years old, married, four living children and three miscarriages. The last living child was born five years ago. Placenta forcibly removed; fever; never well since; not pregnant for three years. Suffers with constant sacral and inguinal pain. Menstruates for ten days, when she has constant colicky pain which does not cease with the flow. Has any degree of comfort only for one week midway between her periods. She has headache most of the time, is irritable, dizzy, her eyes trouble her, and she feels weak and debilitated. Has a yellow discharge before and after menstruation. After

walking she always feels worse. Examination showed anteversion of the uterus, with tenseness and tenderness of the posterior cul-de-sac. The patient presented herself in February, 1888. For a month she was treated with tampons and the hot douche without much improvement. In April the inflated ring was inserted. The patient returned in one week, saying that she felt comfortable, but that a profuse watery discharge was coming away from her since wearing the ring. A week later this discharge had ceased, and her subsequent menstrual period lasted but three days. May 25th, examination showed the right broad ligament still prolapsed, but no great sensitiveness and no tense bands. The patient says that when the ring is left out she has a return of her backache and with it irritability of temper. With the ring in position she feels well and can walk as far as any one. She has now no discharge which she can notice. Seen two years later, she had altogether discontinued the ring and her improvement had been permanent. She remained sterile.

Another case is that of an unmarried woman, 35 years of age, who presented herself at the Demilt Dispensary in January, 1890, with the following history: Three years ago she was very sick, was three weeks in bed, during which time she had to have medicine "to keep her quiet." She never has been well since. She is a domestic. She has leucorrhea, and profuse menstruation lasting a week; saturates three napkins a day; has pain which begins one week before and lasts for a week after the flow; has also a constant aching in the inguinal regions and back; can scarcely drag herself up-stairs; would rather die than live, and is willing to have any operation which will decide the matter. Examination showed tenderness and fulness posterior to the uterus. The patient obtained some temporary relief from tampons, but on their removal her return of suffering was so impressive that she would forget her benefit. She continued utterly hopeless, and laparotomy was seriously considered in her case. On account of a very narrow introitus, it was thought impossible for her to manage the ring. It was, however, explained to her, and her remark was, "It can't hurt me worse than what I now suffer." In May, therefore, an inflated ring was inserted. June 3d, she reported herself as wearing it both night and

day, because she felt so much more comfortable with it in position. She now menstruated but three days, and saturated but a single napkin a day. In August she could go up-stairs without pain. She now had only one-half her previous flow, and but little pain, and had lost entirely the aching, dragging sensation. Examination showed still fulness and some tenderness in the cul-de-sac. December, 1890, she returned saying that for several months she had not worn the ring and her improvement continued. She is able to do her work, and looks and feels well. She now has a slight leucorrhœal discharge before and after menstruating, but not otherwise. She is directed to wear the ring when she has to do washing or other heavy work.

A third case is that of Miss —, 23 years old, unmarried. Came to me in 1887. Had had peritonitis in 1882; was six weeks in bed. Since then she has always had the most agonizing dysmenorrhea and pain in walking, located in the right inguinal region. While a large, well-built, handsome girl, she suffers from nervous prostration, and cannot walk a block without great suffering. She has had leucorrhœa for a long time, the discharge being almost brown in color, while her dysmenorrhea has been so excessive that she has had to give up work and go to bed. She is a teacher, and if menstruation becomes established upon Friday this otherwise healthy young woman will remain in bed until Monday. Examination showed retroflexion, prolapsed left ovary, with tenderness and fulness of the posterior cul-de-sac. It was found impossible to replace the uterus or ovary on account of adhesions. At the end of a month of preparatory treatment the patient was obliged to leave the city, and the inflated ring was inserted. A month later she reported that she had menstruated without pain; she had no headache, no pain in the side, and had stood constantly in teaching. Examination showed deepening of the cul-de-sac, the uterus in position, and the ovary beyond reach of the finger. There was still a sense of fulness of the cul-de-sac, but the tenderness had about disappeared. The patient could walk any reasonable distance. Six months later examination was made after the patient had been without the ring for a number of days. The uterus was in position, the ovary beyond reach. The patient had menstruated without

the ring and without pain. She was directed to discontinue the use of the ring, unless her symptoms returned.

A year or two later this young woman became engaged to be married, and, to deal honestly with the man she was to marry, she told him that she had had pelvic treatment. By his desire she consulted a specialist, and, under the strong psychic influence to which she was subjected, her consent was easily obtained and Tait's operation was performed. She "did beautifully" after the operation, but the man, of course, did not now marry her, and in the meantime her position as a teacher had been sacrificed. I met her later and said to her: "With your physique, education, and this relief from the burdens of womanhood, you ought now to be able to do great things. Are you satisfied with the result of your treatment?" She replied aimlessly, "I don't know." In fact, a distinguishing mark in her character now is her utter aimlessness as compared with her ambition in former times.

The fact that adhesions are broken up or stretched is shown by a deepening of the posterior fornix, the relief of distress, together with the persistence of improvement after the discontinuance of the ring. Pregnancy would be, I think, further proof of this proposition. It is not easy to keep in communication with your cured cases; consequently I have but three cases of pregnancy to report after this treatment, although the number with this result, of course, may be much larger.

The first is that of Mrs. K., who presented herself at the Demilt Dispensary in August, 1888; 30 years old, five children and four miscarriages, the last a miscarriage fifteen months previously, or in May, 1887. Complained of sacral and inguinal pain and profuse menstruation with dysmenorrhea. The flow recurs sometimes every two weeks. The intermenstrual flow may be omitted, but intermenstrual pain is always present. She has "cramps" every two weeks. At these times, although a working woman, she will be in bed for two or three days, and each time will suffer so that her friends will think that she must die. Examination showed a deeply fissured cervix, the body in position, but the cervix drawn backward and the parametric tenderness so great that the woman became faint, cold, and covered with perspiration at the slightest

touch. She could not bear the bivalve speculum at all. An attack of "cramps," lasting several days, would follow any disturbance of the parts. Tampons could not be applied so as to give support, and treatment was restricted to glycerin and the hot douche. In October an inflated ring was inserted, but there resulted so great an increase of suffering that its use had to be abandoned. In November the ring was again tried, and in spite of pain worn for a few hours at a time. After two weeks the fornix was found deeper and the backache had been somewhat relieved. From this time the ring continued to be worn with more or less regularity for a year, and the woman's face now commenced to carry a smile instead of its former lugubrious appearance. She was able to do the work of her family with ease, and pregnancy supervened in June of the present year, so that she is now in her seventh month, comfortable, and with every evidence of a successful issue, the interval from her last pregnancy having been about four years.

The second case of pregnancy is even more conclusive. The patient presented herself June 1st, 1888, a woman 28 years old, married three years, sterile. Eight years before she had "caught cold," and after that time had always had dysmenorrhea, the pain being chiefly located in the left inguinal region. She always went to bed for two days during her period. She did not suffer at other times, but had a constant yellowish discharge, and a cachectic appearance which strongly resembled that of children with joint abscesses; it strongly suggested absorption of pus. The patient said that she had looked the same for six years. The woman was well built and otherwise healthy. On examination the uterus was found only two and one-half inches in depth and quite insensitive to the sound; the cervix had, however, a reddened, angry appearance. I have noticed this irritated condition of the mucous membrane a number of times where there are collections in the tubes. It would seem to suggest the washing of the endometrium by an irritating discharge.

Further examination showed the uterus fixed, and two globular masses also fixed in the pelvis, one to the left of the uterus and the other posterior and to the right. The latter was closely connected with the uterus. The posterior fornix

was short and tense. There was here no marked tenderness. The treatment consisted in the use of the ring and the hot douche. At the end of a year the patient is entered as more comfortable, the uterus is more movable, the fornix is deeper, the tumors are smaller and softer, the cervix has a more healthy appearance. January, 1889, the patient reported a noticeable discharge of grayish matter "the color of the wall." Finally the right collection ceased to be defined as a tumor, a thickening of the tissue having taken its place. About a year ago the patient discontinued treatment; she felt perfectly well and menstruated without pain. In May, 1890, she missed her first menstrual period, and in September, 1890, she presented herself with many of the signs of pregnancy, and a tumor which was fixed in the pelvis upon the right side. Extra uterine pregnancy was suspected, and the patient was taken to Dr. Elizabeth M. Cushier for consultation. Dr. Cushier's wary reply was: "There is a tumor here upon the right side, but whether within the uterus or outside of it cannot be certainly told." The patient was directed to go to bed on the appearance of any unpleasant symptoms. Two weeks later she presented herself again, with the tumor in the median line, representing plainly the body of the uterus, with a band an inch wide extending to the pelvic wall on the right side in the location of the previous collection. The pregnancy has progressed happily, and this band has stretched still further, although it is still plainly apparent. This woman was married in November, 1885, and, up to the present pregnancy, has been completely sterile.

Of course this woman has still the ordeal of her delivery, and, as the case was plainly one of pyo-salpinx, she may have a serious time. But from what I know of women it seems to me that if this woman were intelligent enough to express the instincts of her nature, she would prefer to have fulfilled her destiny at the cost of her life rather than to have saved her life for a time at the sacrifice of all that has for five years made her happiness—namely, the hope of maternity and her husband's love. If the educated woman is aimless and hopeless after castration, what can you say of the working woman, who must endure the sneers and reproaches, and perhaps the desertion, of a very rude man?

I have still a third case, of which, however, I have not exact notes. She came to me in 1886, to my clinic at the Woman's College, and in the moving of the college into its new building I understand that these old record books have been destroyed. This patient had all of the classic symptoms of chronic salpingitis complicated by retroflexion. The peculiar nervousness of the condition was not absent. She obtained relief by the use of hot water and the ring, and the adhesions were stretched or broken so that the uterus finally maintained its normal position for weeks without support. Last fall she felt particularly well, and for several months menstruated absolutely without discomfort. Following this period of *bien-être* she became pregnant, after sterility of six or more years' duration. Her health remained good during the early part of her pregnancy, but its final result I am unable to give, as I have not her address and she lives out of town.

It seems to me that I have proved my position. One pregnancy might have been a mere coincidence, but three cases of pregnancy after sterility of four to six years' duration may reasonably be ascribed, I think, to the treatment which the cases received.

In regard to the use of the ring, the women are instructed to remove it and to leave it out at night. This is done so as to insure cleansing, and to give an opportunity for the muscular tissue of the vagina to recover its elasticity. Allowed to remain in position for two to three days, the inflated ring is a very nasty instrument.

In regard to the disadvantages of this ring, first, it not infrequently produces irritability of the bladder, and has to be discontinued for varying intervals for that reason; second, where too large, instead of being retained under the pubic arch it has forced its way into the anterior cul-de-sac, taking a transverse position in the pelvis, so that it no longer gives posterior support, and a prolonged interval of non-use is required to restore the integrity of the distended part.

I have used the ring in cases of unmarried women, as you will have seen from my reports. It is a measure of the relief given by it, I think, that these unmarried women will attempt its insertion. I have especially watched to determine whether any variety of masturbation appeared to be inaugurated by its use,

and I have been absolutely unable to determine that such was the case. It will be remembered that these were all business women. I do not know how such treatment would affect an idle girl; but, as a rule, I think that treatment which restores health is less mischievous than a persistence of disease. In these cases the girl invariably forgets her ring or loses it as soon as discomfort no longer urges its application. I have consulted a number of married women also upon this point, and they have told me that the application of the ring was not at all calculated to excite orgasm, but that the douche was very likely to have this effect. I therefore avoid the douche so far as I can in cases of unmarried women.

A special advantage of this ring is the fact that it can do so little harm. You can give it to a patient leaving town, with perfect confidence, because in from one to three months it will be worn out and useless.

A CASE OF CHYLE CYST.

BY

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THESE cysts belong to the order of swellings the appearance of which in the abdominal cavity is of the very rarest occurrence. Indeed, only two cases have hitherto been recorded. In the first, by Kilian,¹ the patient, a woman aged 61, suffered from a tumor, lying retroperitoneally and several centimetres to the left of the linea alba, which was proved by combined examination not to be connected with the sexual organs. The second case, under the care of Bramann,² was that of a man who had long suffered great inconvenience from a very movable tumor in the abdomen which the operation proved to be a mesenteric cyst filled with chyle.

In the following case, besides the rarity of its occurrence, a

¹ Berliner Klin. Wochen., 1886, page 107.

² Archiv f. Klin. Chirurgie, vol. xxxv., page 201.

feature of interest was found in the peculiar difficulties of diagnosis, arising from the age and sex of the patient, who was a woman in full maturity. Another object is to show that, although laparotomy in many cases may seem simple enough *au premier abord*, it may yet lead to most unpleasant surprises.

Mrs. de R., age 27, primipara, consulted me in December, 1888, for a swelling of the abdomen accompanied by great pain, especially when in a recumbent position. During girlhood she had always enjoyed good health, married at the age of 21, and a year later was delivered of a full-term child, since which time she has not been pregnant. Menstruation was regular but scanty.

Palpation showed a hard tumor of the abdomen reaching five centimetres above the umbilicus. It was freely movable. Fluctuation was not perceptible. Upon close examination the tumor seemed to be connected with the uterus by means of a long pedicle. The right ovary could be felt on palpation, but not the left.

I did not feel justified, after this first examination, in pronouncing a decided opinion. The symptoms might have been explained by the presence of a subserous myoma with a long pedicle, or of a dermoid cyst or ovarian tumor. At all events, the necessity for operation was sufficiently indicated, both for the relief of pain and inconvenience, and on account of the extreme mobility, which might at any time cause twisting of the pedicle or strangulation of the bowel. There was apparently every reason to believe that the tumor could be easily removed, and, conditions being favorable, it was thought best to operate without loss of time.

Six weeks later the patient was admitted to the hospital and was placed under chloroform for renewed examination, when, fluctuation being distinctly proved, the diagnosis of cyst of the left ovary was made.

On the 12th of February, 1889, laparotomy. In opening the peritoneal cavity the bowel protruded immediately in several loops. These being with difficulty replaced, it appeared that, notwithstanding the extreme mobility of the tumor, it was impossible to bring it forward. Only a very small portion of its surface was visible, the rest being entirely covered

by the *radix mesenterii* adhering to the cyst wall. Numerous large and small blood vessels ran from the bowel to the serosa of the tumor, which anatomically occupied the position of the mesentery and was now recognized as a mesenteric cyst. Total extirpation was not to be thought of on account of its close anatomical relations with the bowel. I therefore decided to stitch the cyst wall to the edges of the abdominal wound, intending to open and drain the tumor as soon as perfect adhesion had taken place. The seventh day I was urgently called to the hospital, being told that a swollen, remarkably hyperemic portion of the bowel had protruded through the wound and could not be replaced. I enlarged the abdominal aperture by a new incision vertical to the first, so that it became possible to expose a surface of the cyst wall where there were no blood vessels. A trocar was introduced and a large quantity of dense, coagulated, milk-white liquid drawn off. After removing the trocar I enlarged the incision in the cyst wall with the bistoury, when a considerable quantity of the contents was discharged into the abdominal cavity. I then washed out the cyst with a weak solution of boracic acid, stitched it to the abdominal wound, and drained it with 10 metres of iodoform cotton wick. The inside of the cyst wall was smooth and of a leathery consistence. Convalescence remained undisturbed, temperature never exceeding 98.6° F. (37° C.). On the third day spontaneous defecation took place.

Four weeks from the time of the operation the patient was able to leave her bed, and, a fortnight later, left the hospital in perfect health. The contents of the tumor being submitted to analysis by Dr. Leehuyzen, of the Pathological Laboratory of Amsterdam, were found to consist of an emulsion with a slightly acid reaction, smelling of fat, and (diluted with an equal quantity of water) the specific gravity was 1.011. It did not congeal at 50° C. The sediment was composed of rosettes, needles, fat globules in great quantity, and cholesterin. The fluid portion was highly albuminous, containing albumin, globulin, and probably casein. There was no hemi-albumose, peptone, or mucin. A very small portion of sugar was found in the fluid after separation from the albumin. Ten c.c. of the liquid contained 2.91 gm. of dry matter, with 0.327 gm. of

ash; of this quantity the soluble part consisted almost entirely of potassium and sodium salts.

These facts made it certain that the tumor was a chyle cyst. My opinion had also been formed, in a great measure, from the microscopical examination of the cyst wall. This was composed of connective tissue with blood vessels, and contained neither epithelium nor endothelium on the inner surface. Every histological and chemical peculiarity characterizing a dermoid cyst or echinococcus was totally wanting in this case, while the contents of the tumor could only be looked upon as chyle.

The symptoms of chyle cyst are not sufficiently characteristic to admit positive diagnosis before operation. In the most favorable cases, the presence of a cyst either of the mesentery or peritoneum may be suspected (Bramann), but it is impossible to decide with certainty between the three forms without first resorting to diagnostic aspiration, which, as in my case and in many others, may be of little use.

The great mobility of the tumor, satisfactorily accounted for by the similar peculiarity of the mesentery, is of great importance in diagnosis. It was an indication in Bramann's case and in mine, but absent in Kilian's, where the swelling, having pushed forward the kidney and colon, had no room to move. The reason why this peculiarity appertaining to mesenteric cysts is of so much importance in diagnosis is that, in the case of the male, this mobility characterizes almost exclusively wandering organs. Women, on the contrary, are subject to various tumors—as, for instance, myomata with long pedicles, or ovarian tumors—also showing great mobility, which increases the difficulty of making diagnosis. This is why, in my case—the only non-retroperitoneal cyst I ever heard of in a woman—it was impossible to make the diagnosis before the abdomen was opened.

With reference to treatment, I wish to remark on the impossibility of extirpating these tumors. Gangrene of a great portion of the bowel would be the inevitable result, because the principal part of the cyst wall occupies the place of the mesentery, with its numerous blood vessels.

The great mobility of these tumors makes them equally unfit for artificial adhesion by sutures to the abdominal

wall, so that the only course remaining is to make an incision, remove as much of the cyst wall as can be taken away, and finally attach what is left to the abdominal wound. The only disadvantage in this method is the danger of hernia ventralis, to neutralize which a well-fitting band should be constantly worn.

Puncture of the cyst only is not sufficient, according to Kilian's experience. In his case the cyst twice refilled after the puncture was made, whilst in mine and in Bramann's the result of the operation was perfectly satisfactory.

The origin of these cysts cannot be traced with any certainty. Stenosis of the thoracic duct is the first suggestion; but although a stricture of this nature might cause widening at the bottom of the duct, it does not sufficiently explain the formation of the cyst. Besides this, in cases of stenosis, collateral channels for the conveyance of chyle into the blood have been observed. The entire closing-up of the duct can, however, give rise to considerable enlargement and crowding-up of the chyle vessels (system), as explained by Virchow, Kilian, and Rokitsky.

In my case the etiology was obscure, but it was positive there was no direct communication between the cyst and the chyle vessels, as no escape into the sac was observed after the operation.

INDICATIONS FOR OPERATION IN ECTOPIC PREGNANCY.¹

BY

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THIS paper is based upon the assumption that the only proper treatment of ectopic gestation is that by abdominal section. Electricity has been proven to be an uncertain feti-

¹ Read before the Southern Surgical and Gynecological Association, at Atlanta, Ga., November 17th, 1890.

cide in these cases; it has been shown to be dangerous in its application;² it has been demonstrated to be so tardy in action that fatal accidents may occur before other results are realized;³ it almost invariably leaves patients with dangerous after-conditions, even in cases reported as successful;⁴ and, finally, it has been reported as having been successful in such a large number of cases in which the diagnosis was more than doubtful,⁵ that its effectiveness for other than mischievous results is open to the most serious question. I take it that the verdict of guilty on each of the several counts in this most serious indictment has been ratified not only by this Association but by the profession. When, therefore, I speak of operation for ectopic gestation, I mean only laparotomy—or more properly, according to Harris, celiotomy—as the only one longer open to consideration.

At this late day it might seem, to those who have not studiously followed the developing literature of this subject, that a discussion of the indications for this operation could be only a work of supererogation. To those, however, who have examined carefully the many clinical reports and speculative disquisitions which have appeared within the last few years on the general subject of ectopic gestation, the fact has long since become patent that, although the scientific thought of the surgical world approves of abdominal section, it is far from being a unit upon the equally important question as to the time and circumstances under which it should be practised in these cases. Shall we operate as soon as a diagnosis can be made? shall we wait for rupture? shall we operate at the time of primary rupture? shall we operate only after secondary rupture? shall we wait for the subsidence of what is generally called “shock,” but which is uniformly hemorrhage?—are all questions the answers to which have been far from uniform. Within a year I have heard a distinguished

¹ Coe, *AM. JOUR. OBST.*, January, 1890; and Bovee, *Annals of Gyn.*, July, 1890.

² Brothers and Janvrin, *AM. JOUR. OBST.*, February, 1890.

³ Montgomery, *Annals of Gyn.*, July, 1890.

⁴ G. M. Tuttle, *AM. JOUR. OBST.*, January, 1890; and Brothers, *ib.*, February, 1890.

⁵ Lambert, *Trans. Am. Gyn. Soc.*, 1882; Allen, *AM. JOUR. OBST.*, 1872; Wilson, *ib.*, 1882.

operator plead for delay on the ground that his patient, who was demonstrated to be bleeding into her abdominal cavity, might "react" from the "shock" of rupture; and within a month Dr. Thomas H. Manly,¹ with an experience of a single case, counselled non-interference before term, on the ground that extra-uterine pregnancy is not attended with much danger to the mother's life! It is questions and views such as these that indicate the existence of remaining moot points in the great theme of ectopic gestation, and in approaching their discussion I beg to assure you that I am not only impressed with the importance of my task, but am, at the same time, conscious of the difficulty of arriving at conclusions which may be stated in dogmatic terms.

The confusion which exists on this important subject can be largely accounted for by the misinterpretation of the writings of Mr. Tait on the subjects of hematocele and ectopic pregnancy—indeed, it has fallen to my lot to hear Mr. Tait quoted as authority for the postponement of an operation until the unfortunate patient had become well-nigh exsanguine. How the clear and distinct utterances of this master of good English can be thus perverted into views which are certainly foreign to his well-known practice, cannot be easily explained. Mr. Tait, it is true, advises that extraperitoneal hematocele should be let alone, as the clot will in the majority of instances disappear by absorption, but that in the event of secondary rupture into the peritoneal cavity abdominal section should be done at once. This is all very plain and clear. The possible confusion, however, comes in when he states that the majority of cases of hematocele are in his opinion instances of primary rupture of ectopic-gestation sacs, and the careless reader at once jumps at the conclusion that all cases of primary rupture in ectopic gestation shall be let alone to await symptoms, particularly those alarming symptoms indicating secondary rupture into the peritoneal cavity.

In the first place, Mr. Tait teaches nothing that is in consonance with this conclusion. I make this general statement because in the present misconception of the subject it is important that the disclaimer be made prominent. In the next place, I beg to indulge in some other criticisms. The first is

¹ International Journal of Surgery, October, 1890.

that the terms "primary" and "secondary" as applied to rupture of the gestation sacs are unfortunate. As used in even the text-book literature, the term "primary" is made to mean rupture into the folds of the broad ligament, whereas the word etymologically used means first rupture, without reference to either location or direction of that rupture. And "secondary" rupture is made to mean rupture from the broad ligament into the peritoneal cavity, when it should and in reality does mean second rupture, without reference to any other fact whatever. To impose upon these ordinary, every-day words the necessity of conveying a special and technical significance when used in connection with a special and important subject can only result in raising more or less confusion with regard to that subject. If the tendency to telegraphic brevity, which is the chief tendency of our language to-day, were resisted, and care were taken to express with well-selected but more words exactly what may be meant, ideas would be more accurately communicated and controversies would be averted.

In the present instance it would be vastly more proper to speak of "extraperitoneal" or "subperitoneal" rupture than of "primary" rupture, and of "intraperitoneal" rather than of "secondary" rupture. In no instance ought these respective sets of terms to be used as synonyms, as they are in no sense related.

There are a few other reflections which may be indulged in at just this point. Although the possibility of extraperitoneal rupture or tubal gestation is not denied, its frequency is certainly open to question. If the tube were to burst within a week or two after conception, and before the investing peritoneum had become attenuated by progressive distention, it might be easily understood how that membrane might deflect the discharging contents of the tube from a rent at any point in its circumference downward between the leaflets of the broad ligament; but, as is well known, rupture does not ordinarily take place before the tenth or twelfth week, at which time the peri-tubal peritoneum has undergone such changes as to deprive it largely of its powers of resistance. This important fact explains why, in the vast majority of instances, rupture of the impregnated tube generally takes place directly into the peritoneal cavity. Although I have seen

three cases in which the extravasation was primarily into the broad ligament—all of them cases of suspected ectopic gestation, and two of them demonstrated to be such—I am convinced that in the ordinary run of gynecological practice my experience has been exceptional. Price, whose experience in this particular class of cases has been larger than that of any other American operator, and whose list probably stands second only to Mr. Tait's, has never encountered a case of extraperitoneal rupture, and, what is still more extraordinary, he has never, in his almost limitless practice, met with an extravasation of blood into the broad ligament. With an observation such as this we are forced to the conclusion that, in a given case of ectopic gestation presenting evidences of rupture, the preponderance of probability is that the rent has occurred directly through the wall of the tube into the peritoneal cavity, and that as a consequence we have the least possible excuse to wait for the self-limitation of the hemorrhage.

Of course when we speak of a time for operating in ectopic gestation we premise that a diagnosis of that condition is possible. We are informed, as some of us know by experience, that this is at the very best a difficult matter. It was my privilege but recently to witness an abdominal section at the hands of one of the most brilliant of our American operators. The conditions, aside from a distinct intrapelvic tumefaction, were obscure, and a diagnosis of the positive and differential sort had not been attempted by the sagacious surgeon, although the guess had been ventured that the case was one of pyo-salpinx. A tumor the size of a California navel orange was removed. This tumor was demonstrated to be tubal in origin, but even after removal it was an open question whether it contained blood, or pus, or serum, or an ectopic gestation. Section of the specimen proved the latter to be the case. I am ready to admit that a presumptive diagnosis could have been made in this case. The last observation, I beg you to understand, is not made in the spirit of criticism, for I firmly believe that conditions sufficient to justify an operation were observed in this case and can be detected in any similar case before section and without a differential diagnosis having been made. It is not my practice, however, to ignore the

most careful diagnostic inquiry into not only these but all other pelvic cases. In this day of exploratory incision, the legitimacy of which is here not only not questioned but emphatically affirmed, there is too much of a tendency to ignore other diagnostic methods in intrapelvic and abdominal diseases. The tendency is particularly unfortunate in these cases, for, by overlooking the rational indications of ectopic gestation, the urgency of the case may escape consideration and the patient be relegated to a fatal delay. Although eminent authors have denied that cases of ectopic gestation have even been diagnosed before rupture, it would seem that Mr. J. W. Taylor,¹ of Birmingham, England, has been at least fortunate in his guess in one case. In this instance he made a memorandum of the diagnosis of ectopic gestation at the time of first examination, and subsequently verified it by section. He informs us that he arrived at his diagnosis in this case by regarding the following points,² viz.:

1. "Amenorrhea, followed after six or seven weeks by irregular hemorrhage.

2. "Absence of any uterine enlargement.

3. "Tubal tumor, usually felt directly behind the uterus."

Of the symptoms embraced in this certainly very brief summary, the first is of positive value and will generally hold true, while the two others are open to criticism. I believe it will be most generally found to be true that there is not in these cases total "absence of any uterine enlargement"; on the contrary, the evolutionary process, which begins in the tube the moment the fecundated ovum becomes implanted, extends to and embraces the uterus. This can be not only logically predicated upon the development of decidua from the endometrium, but has been actually demonstrated by measurements in my own cases, and further confirmed by post-mortem revelations at the hands of numerous investigators, the longitudinal diameter of the womb being in no instance less than three inches. To state that a retro-uterine tumor is tubal in origin presupposes the possession of a diagnostic acumen on the part of the examiner with which the average gynecologist on this side of the Atlantic is not blessed. It is,

¹ Medical Press and Circular, vol. xlix., 1890.

² *Ib.*

however, true that a tumor "usually felt directly behind the uterus," considered in connection with other facts, increases the presumption of ectopic gestation. The other facts which have commended themselves with particular force to me are :

1. Previous history of sterility, either preceded or associated with recurrent attacks of pelvic inflammation.

2. "Amenorrhea, followed after six or seven weeks by irregular hemorrhage."

3. The presence of slight uterine enlargement sufficient to be detected, in favorable cases, by bimanual examination.

4. Softening of the cervix, with slight purple coloration of both the cervix and vagina.

5. Intrapelvic tumefaction, either unilateral or retro-uterine, which tumefaction is progressive both as to area and density.

6. The existence of villi of decidua within the uterus.

Of these various conditions, I feel that only the first and last need additional mention. With our present understanding of the pathological changes which are antecedent and sustain an etiological relationship to ectopic gestation, we can readily understand why these cases usually have a history of preceding sterility. The desquamation of the cilia from the tubal endothelium occurs generally as the result of long-sustained inflammation of the tube. An inflammation at this particular portion of the tube must, during the activity of the circulatory disturbance, produce an edema which in turn induces, in a mechanical way if no other, an occlusion of the oviduct—a condition inimical to fecundity. With the subsidence of the active inflammation, however, and with the coincident destruction of the endothelium, the barriers are removed and the errant spermatozoa make their mischievous journeys into regions which were never designed for their playgrounds. These changes require time, and the period thus embraced is a period of sterility. With regard to the diagnostic importance of the endometrial decidua, I fancy that none will dispute its conclusions, but many will urge that its existence cannot be safely determined. On this point I beg to urge that I believe that my method of examination is as free from danger as it is simple; and it is a method to which I always resort, for I never accept the statements of patients on

this point. I permit an Emmet curette forceps to simply gravitate through the generally patulous cervix; if obstruction is encountered, no force is employed, but the instrument is at once withdrawn; if no obstruction is encountered and the forceps drops into the uterine cavity, a very simple manœuvre only is required to secure the important shreds of decidua. I have fortified my presumption of a diagnosis in three cases, one of them before rupture, the specimen of which is herewith presented. In this case no fetus was found, but, as will be seen, the tube is thoroughly filled with decidua, in the midst of which was found a very considerable pocket of pus. This I construed to be the suppurated remnants of the fetus. But, without any reference whatever to their pathological peculiarities, the point that I wish to impress is that the intra-uterine decidua has a diagnostic importance, and that its existence can be determined by methods that are innocuous. I would not, however, be fair either to myself or my theme if I were not to add that, notwithstanding the possibility of a diagnosis before rupture, for which I contend, it is undeniably true that the majority, indeed the vast majority, of these cases are not detected until after this deplorable accident. The reason is that in most instances there is nothing extraordinary about the cases to attract the attention of the patient, much less that of her physician, who is usually not called until after the fatal rupture. Then the diagnosis is simply the diagnosis of internal hemorrhage. I here plant myself firmly upon the ground that, in the presence of this grave complication, time lost in an effort to distinguish between an intraperitoneal and an extraperitoneal hemorrhage is but a culpable trifling with life. Has the patient hemorrhaged? is the all-sufficient inquiry. This is determined by the sudden onset of pain in the pelvis and lower abdomen, accompanied with faintness and a pulse of increasing frequency and diminishing force. There may be, and doubtless is, vaso-motor depression, which we call "shock," but this vaso-motor depression is but the result of the invasion of the peritoneal cavity by a foreign element, which element is nothing more or less than the escaping blood. A refined analysis of "shock" in such cases as these can be but an element of confusion; it were better to say that "shock" is "hemorrhage," and to treat it accordingly. At this point, however, several

questions have been obtruded upon operators in a way calculated to affect their responsibility, and to their consideration I now invite your attention.

At the time of rupture, shall we wait for the subsidence of "shock" before operating? This is a question that can be answered both in the light of pathology and in the light of experience. If we consider the pathology of the case, we are forced to recognize that if the hemorrhage be subperitoneal there is a chance—a bare chance—of its temporary arrest and of the subsidence of "shock"; but if, on the contrary, it be intraperitoneal, there is no prospect of its temporary arrest and no prospect of the subsidence of the "shock." It is not practicable to determine the facts in this regard, nor is it prudent to make the effort, for any examination which will enable a surgeon to arrive at the truth is liable to disturb the tissues to an extent calculated to aggravate the pre-existing mischief. The fallacy of waiting for the subsidence of shock was shown in the published case by Manly in the *International Journal of Surgery* for October of last year. Called to a case in which a presumptive diagnosis of ectopic gestation had been made by both the attending physician and a previous consultant, he found a patient in whom "the vital phenomena were at a low ebb. She was deathly pale. Her blanched skin was covered with a clammy perspiration. The pinched, sunken features were of the genuine Hippocratic type. She lay on her back moderately narcotized, making slow, sighing respirations. The tongue was coated with a moist fur in the centre, but was of normal color on its borders. She was in a state of mental lethargy, and said she felt but little pain."

Finding a woman in this fix, he adds, "I directed free stimulation, ordered the carpets taken up, the walls scrubbed, and the parts thoroughly disinfected. In the meantime *I requested the patient to be in readiness for an operation at an early hour the following morning.*" (Italics mine.)

By the next morning he had made up his mind that success depended upon "rapidity of operation, a small incision, ready control of hemorrhage, rigorous asepsis, and the avoidance of shock." The operation was done, the mother was delivered of a five months' fetus, of a placenta, and of a belly-

ful of blood. That the mother recovered in spite of all this inconceivable procrastination—a delay undertaken to enable the neighbors to remove the carpets and wash the walls and disinfect the place, and to overcome shock, and to let her belly fill with blood—I say that this woman ever recovered is vastly more of a compliment to her own vitality than to her surgeon's skill. The better way to overcome shock in these cases is to *first* stimulate the patient with ether, *next* arrest the progressive depression by arresting the bleeding point, and *finally* put the whip and spur to the vaso-motor system by flushing the belly with hot water—and *do it at once*.

The period of primary shock having been passed, shall we wait for further indications before operating? This question brings to mind two of my cases, both of which appear in the Transactions of the Ohio State Medical Society. The first was in the care of Dr. Twitchell, of Hamilton, Ohio. The patient had long since passed the period of primary shock when she sent for her physician, having construed the shock as a "chill," for which she took some quinine. When I saw her she presented evidences of sepsis, and I operated when she had a temperature which was vacillating between sub-normal and 104° F. On opening the sac I found it filled with blood clot, pus, and the easily identified remnants of an ectopic gestation. In another case I felt sure that I had an extraperitoneal rupture, and, with confidence in the possibility of absorption, I waited for the disappearance of the clot by that method. The volume, however, did not diminish, but, on the contrary, at each menstrual period the tumefaction clearly increased, until, after the lapse of several months, I finally operated, when I removed nine pints of black blood from beneath the peritoneum. These patients both recovered. In a still later case, occurring in the practice of Dr. Geo. C. Skinner, the extravasation increased during a week to such an extent that in burrowing downward it separated the vaginal and rectal layers of the septum clear to the perineum. In these three cases, all of them primarily extraperitoneal, and the latter two remaining in that class up to the time of operation, it was clearly shown that, in spite of treatment calculated to promote the absorption of the extravasated element, the hemorrhage proved to be progressive. This experience, limited

as it has been, has convinced me that an extraperitoneal extravasation or a subperitoneal hematocele may not absorb, and that a line of treatment based upon such an expectation is liable to lead not only to the disappointment of the physician, but to the death of the patient. The logic of these cases would be that the rational way to arrest the hemorrhage is to tie the bleeding vessels, and that the most expeditious and safest way to remove the blood is to open the cavity and wash it out. It may be urged that the recovery of the first two of these cases argues against the adoption of any other plan than that which was employed; but the death of the third from sepsis, the autopsy showing a ruptured tube with a decidua, furnishes more than a suggestion having an opposite significance. It is true that the first two cases recovered, but they recovered only after having incurred danger from which they ought to have been spared.

The question of the viability of the fetus has been magnified into undue importance. I am convinced that the lives of many mothers have been sacrificed to this mawkish sentiment—a sentiment which is assumed in many instances only as a cloak under which to hide surgical cowardice. No one, however, can ignore the fact that children, the product of ectopic pregnancies, have been delivered by section and are now living. There are therefore instances in which the fact *will* be forced upon us and must exercise a determining influence upon our line of action. In this particular I agree with Dr. William Duncan¹ that, if the case has passed well beyond the fifth or sixth month, we should allow it to proceed to term, *but under the strictest possible surveillance, with preparations at hand to operate at any moment.*

In reviewing these cases from the date of conception up to delivery by section at term, we cannot but be convinced that there is not a moment when they are free from the danger of possible hemorrhage. Rupture presents the danger of death from shock, or rather hemorrhage; arrested hemorrhage of the extraperitoneal variety—and I know of no other variety that is ever arrested without operation—presents the danger of death from suppuration and sepsis; completed pregnancy of the ectopic kind offers danger of death from either placental

¹ Lancet, March 1st, 1890.

hemorrhage at the time of operation or from sepsis following it. These dangers are all so clearly of the demonstrated sort, and are at various stages so real and so imminent, as to not only justify but to make imperative an exploratory operation upon a fairly well grounded presumptive diagnosis.

Dr. Wm. Duncan, of Middlesex Hospital, in the article already quoted, sums up the question in terms that are so clear and in such consonance with my own views that I offer no apology for quoting them as follows:

"If, then, from the symptoms and physical signs you diagnose tubal pregnancy before rupture, I urge most strongly that the abdomen be opened without delay, for the woman's life hangs upon a thread which may snap at any moment; and even if it should prove, on examining the tube after removal, that it is distended with either pus or serum or blood, still the right course will have been adopted, and the risk from such an operation carefully done is nowadays comparatively slight."

This view is in entire harmony with that entertained by Mr. Tait, the careless reading and reckless misinterpretation of whose writings have given rise to so much confusion on this topic. That distinguished surgeon, on page 459 of the American edition of his work on "Diseases of Women and Abdominal Surgery," says:

"If I ever should make a diagnosis of tubal pregnancy before rupture, I should advise the immediate removal by abdominal section as being more certain and far more safe than the fancy methods of puncturing the cyst and injecting poisonous fluids or passing through it some kind of galvanic current."

I feel that I might close my paper with this impressive quotation, were it not that another matter is fast coming to the fore and that must in all probability be discussed under the head of *indications for operation*.

Dr. G. Ernest Herman¹ reports a case in which he operated for ectopic pregnancy in January, 1887, and operated a second time on the same patient in May, 1890. Mr. Tait² reports a case in which he did abdominal section for ectopic pregnancy in 1885; the patient had a child at term eighteen months later; fifteen months later she became, for the second time,

¹ British Medical Journal, September 27th, 1890.

² British Medical Journal, vol. i., 1888, p. 1001.

the victim of an ectopic pregnancy, from the rupture of which she succumbed, the diagnosis being confirmed by autopsy. Dr. Leopold Meyer, of Copenhagen,¹ gives a case in which the first operation was done in 1887, and who had all the rational and physical signs of ectopic gestation in September, 1888. He gives the abstract of nine other cases, including the one already quoted from Mr. Tait. Those on the list which were clearly confirmed by section occurred in the practice of Ols-hausen, Veit, and Tait. This list of eleven cases of ectopic gestation occurring for the second time in women previously operated upon for this condition, clearly raises the question as to whether or not the appendages on the other side should be left at the time of the first section. The briefest possible consideration of this question must bring into the foreground the pathological condition underlying this aberrant form of gestation. As has already been stated, this primary and causal condition is essentially one of desquamative endo-salpingitis. Professor Formad, in some remarks on the subject at the recent meeting of the American Association of Obstetricians and Gynecologists, stated that of twenty-eight cases of ectopic gestation which he had examined post mortem, all had shown evidences of inflammatory destruction of the endo-tubal cilia. This important fact, coming from so eminent a pathologist, has a significance which is simply conclusive. For our present purpose, this fact teaches that the conditions upon which ectopic gestation depends are essentially bilateral, for it is a matter of every-day observation that this form of tubal disease is but rarely restricted to one side. The practical point to be deduced from these considerations is that, in extirpating the involved appendages from only one side, we leave the unfortunate woman liable to a repetition of the tragic complication, and that it is our duty, whenever indicated by the least evidence of disease in the other side, to remove the appendages from both sides.

In view of these various considerations, I beg leave to urge in conclusion:

1. That the only proper treatment of ectopic gestation is that by abdominal section.

¹ Annals of Gyn. and Ped., July, 1890.

2. That the operation should be done before rupture, as soon as the condition can be presumptively diagnosed.

3. That the operation should be done in all cases as soon as evidences of internal hemorrhage become apparent, and without waiting for the subsidence of so-called "shock" or delaying to attempt a differential diagnosis between extra- and intraperitoneal hemorrhage.

4. That in cases in which the sixth month has been reached without rupture, pregnancy should be allowed to advance to term before operation, but only under constant supervision.

5. That in all cases in which the appendages of the other side present the least evidences of disease, they also should be removed, providing the condition of the patient at the time will justify such extension of the operation.

311 ELM STREET.

THE RATIONAL TREATMENT OF UTERINE DISPLACEMENTS,
BASED UPON A CONSIDERATION OF THE PATHO-
LOGICAL CONDITIONS PRESENT.¹

BY
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A STUDY of the pathological changes which bring about these conditions, and of those which result as a consequence of the unnatural position of the organ, is particularly necessary for a proper appreciation of the treatment required to effect a cure. I will consider them, then, in connection with each individual condition which they produce, together with such other changes as take place in the uterine structure itself, and endeavor to show the applicability of the method herein suggested.

I of course have in view those malpositions which have existed for a time, and not those of recent origin (the result of some accident). Unfortunately, we are seldom consulted before important changes take place rendering the displacement permanent. Hence little is necessary to be said about the treatment of these recent cases. When they do come under

¹ Read before the New York Obstetrical Society, November 4th, 1890.

observation, however, immediate replacement is indicated, and, when it can be borne, a properly fitted pessary should be used to maintain the normal position until the impaired natural supports can be toned up. While this may sometimes be effected by rest and general tonics, it is wiser and more certain treatment to bring to our aid certain agents at our command which will assist us in accomplishing this result, instead of depending too much upon nature and the pessary. The tonic effect of electricity is so well understood that it seems superfluous to dwell upon the method of its application in such cases. Both currents (faradic and galvanic) may be employed and have their separate indications. The faradic will be more effective used by the bipolar method in the vagina for strengthening the uterine supports, while the galvanic, especially the positive pole, may be used to exert a tonic and curative effect upon the uterus and its lining membrane, which is so often found in an inflamed state.

I come now to the consideration of displacements produced by inflammatory changes acting as a maintaining cause, and where pathological changes are to be found in the walls of the organ itself.

ANTEVERSION.

In anteversion there is usually a chronic metritis and endometritis; the uterus is infiltrated, thickened, and rigid; the normal curve of the organ is obliterated, causing the external os to point to the hollow sacrum, and the fundus by its increased weight rests heavily on the bladder. In addition we may, according to Schultze, expect to find a posterior perimetritis or parametritis in a chronic form. There may be posterior fixation and shortening of the recto-uterine ligaments as the result of this inflammatory process, and this must be taken into consideration in the treatment of the case. This condition may exist and still there may be moderate mobility of the organ, unless there is anterior fixation also, which is infrequent.

It is evident from the condition present that the first steps in the treatment must be directed towards relieving the morbid process producing it, instead of vainly endeavoring to remedy the malposition before this is removed. I know of

no agent equal to galvanism for accomplishing this end, if it is judiciously employed. The chronic metritis and endometritis can certainly be relieved by it, and probably also the deposit removed, and the adhesions may, in many instances, be relaxed and loosened under its influence conjoined with gentle massage. If there is much tenderness to pressure and the parts are irritable, treatment should commence with applications of positive galvanism to the vagina of 50 to 80 milliamperes used for five minutes every second day, with the external electrode placed alternately on the abdomen and lower spine. When the irritation has subsided it is time to begin with applications to the uterine canal. The platinum electrode, moderately curved, and fixed in a rigid handle, should be introduced along the index finger as a guide. To facilitate its introduction the fundus may be gently lifted by pressing up through the anterior vaginal wall after the electrode has entered the cervical canal. The electrode should be arranged so as to come in contact with the whole uterine canal from external os to fundus; but the fundus must not be touched roughly with the point of the electrode, nor rest too firmly on its point during the application. The electrode to be used must be made of platinum or the prepared steel, and no larger than the ordinary uterine sound, so as to allow the escape of gas around it. The positive is the pole always to be used in the beginning, unless the cervical canal is small and insufficient for drainage of the secretions from the uterine cavity, in which case the negative may be cautiously employed first. Beginning at 30 milliamperes, the dose with the positive pole may be increased at each sitting as tolerance is established, until a strength of 50, 80, or 100 milliamperes is reached, and the external electrode may be applied alternately to the abdomen or lower spine as the condition indicates. (The larger doses are by no means always necessary.) When the chronic inflammatory condition has been subdued the negative pole may be substituted, but the dose need rarely exceed 50 to 60 milliamperes, used inside of the uterus with the bare electrode, and it should start at 20 milliamperes. If they are borne well, the applications may be made every second day and continue for five minutes. Massage or manipulation of the uterus with the electrode in position and while the current

is in action may be permissible after the negative pole becomes well tolerated.

The use of glycerin tampons after the applications, made of four thicknesses of plain gauze flattened out, with a string loosely attached, will prove an excellent auxiliary in the treatment of these conditions. The gauze is preferred to the cotton or wool tampon, because it may be spread out in the vagina and will remain so, while the other becomes a firm lump or ball when it is soaked, and often irritates by exerting undue pressure where it is not wanted. Even when it becomes advisable to lift up the fundus with a properly adjusted tampon, and the effect of the glycerin is still desired, it is preferable to use a gauze tampon next to the anterior vaginal wall and a vaselined cotton or wool tampon under it. The vagina being flattened antero-posteriorly in its closed state, the cotton-glycerin tampon will act as a plug, and the escape of discharges from the uterus will often be retarded by it. The proper use of vaselined tampons in the latter part of the treatment will be very much more satisfactory than a pessary.

Where there is relaxation of the vagina and uterine supports, something may be expected from bipolar faradization to the vagina. It will also prove useful (if the current from the long wire is used) in subduing a very sensitive condition which may exist primarily, prohibiting the use of the galvanic current, or which may occur in the course of the treatment.

In outlining this course of treatment for anteversion, it is not, of course, intended that it should apply strictly to all the different conditions in the same manner, for some cases will present themselves where the treatment may be commenced at once with the negative pole and the progress will be more rapid. Such cases are those where the exudation, if present, is in a quiescent state and not sensitive. But usually the inflammatory complications, or a menorrhagia which is so often attendant upon anteversion, demand the use of the positive pole until they have been overcome, before the negative can be employed.

The negative pole used in the uterus is prompt in its action, because it takes effect directly upon the endometrium and uterine tissue; and if the external electrode is placed so as to

include any deposit between the two poles, it comes as well under the influence of the interpolar action as when the electrode is placed against it in the vagina. When an effective dose cannot be tolerated in the uterus, however, it becomes necessary to resort to the vaginal applications.

A version may sometimes be completely cured by using the positive pole only, but these are cases where the uterus is not unduly rigid and where there is no parametric exudation, or, if so, it is recent.

ANTEFLEXION.

In anteflexion there is rigidity at the point of flexion, a shrinking of the tissues of the anterior uterine wall, and an increase in volume of the posterior wall. This is the result of an endometritis and metritis occurring after the flexion takes place, making it permanent. Some authors believe that there is often posterior fixation of the cervix from a posterior parametritis and shortening of the utero-sacral ligaments. In women who have not borne children, the parametritis may be subacute or chronic without having been preceded by an acute attack, and it is well to bear this in mind. It is not necessary always to trace such a condition to a badly managed labor, or abortion or gonorrhea, for it may result from obstinate constipation, or from pent-up catarrhal secretions in the uterine cavity because of the obstruction to drainage afforded by the flexion. Anteflexion may be congenital or acquired. When congenital—or, as Schultze terms it, puerile—there is generally found an imperfectly developed uterus with either amenorrhea or a very scanty menstrual flow. Unless an active endometritis is present there is a decided obstruction to the passage of the sound at the point of flexion. When acquired, it is primarily due to a want of tone in the muscular structure of the uterus itself, or, as Graily Hewitt claims, a “softness of the uterus.”

These statements are subject to some modification, for all flexed, undeveloped uteri are not necessarily congenital. Their development may be interfered with by a poorly nourished condition of the system at the time of puberty, or some accident occurring before puberty, displacing the organ then, may so interfere with its proper circulation and nutrition as to stop its development. This is frequently the case with

retroflexions. I once saw a girl 19 years old with a retroflexed uterus the size of a girl's of about 8 years, and there was only an effort at menstruation. She had been thrown from a carriage at about that age, and was supposed to have injured her back. The uterus was probably displaced at that time, and, remaining so, its development was arrested.

Though the claim of Graily Hewitt, that there must have been a softening of the uterus before a flexion can occur, may be questioned, it is certainly true that the rigid uterus must be softened before the flexion can be permanently overcome. Hence the appropriateness of the treatment by galvanism. Attention to the different actions of the two poles will show which is indicated in commencing treatment. The negative, which produces a softening and relaxing effect, is the pole to be chosen. The indications for treatment are, first, to produce relaxation of the rigid uterine structure, as well as dilatation of the canal, to allow drainage from the cavity and promote absorption of any parametric deposit which may be present, and then to cure the metritis and endometritis and tone up the relaxed supports.

There are two ways of accomplishing the first indication, viz., either by moderate dilatation with the steel dilator and the intra-uterine stem followed by galvanism, or by galvanism alone. In certain cases, as where the flexion is congenital or where it is very acute and there is stenosis, the cure can be more speedily and effectually accomplished by beginning with forcible dilatation, if there is nothing to contra-indicate it. The usual method of forcible dilatation or divulsion, however, is not to be thought of, as it is harsh and unnecessary. A moderate dilatation, carefully done under an anesthetic, and a straight hard-rubber stem, perforated through its centre so as to facilitate drainage, introduced immediately after and worn for a week while the patient is confined to bed, will accomplish all that is desired, and is free from the objections to be urged against the other method.

The operation is carried out in this way, viz.: The patient, when thoroughly anesthetized, is placed in the Sims position and the vagina is rendered aseptic. Seizing the cervix with the angular tenaculum (which does not tear out) on its external surface, it is steadied and straightened out while the

dilator is introduced. The dilatation should be accomplished with as little force as possible, and should only be carried to that degree which will allow the introduction of the smallest-sized stem, No. 10. This is to be held in place by a loose iodoform or creolin gauze tampon. The stems are of three sizes, 10, 12, and 14 (English scale), and should be used successively as relaxation without further dilatation allows their introduction. The tampon and stem must be removed every day, cleansed, and replaced. After these stems have been worn for a week, the patient meanwhile being kept prone in bed, complete dilatation of the canal will be effected, while drainage from the cavity is perfect. Besides, the straight stem has acted as a splint, and the uterus has been made straight and the rigidity of its walls has been overcome. With care and the proper use of galvanism a cure may be speedily effected.

A few applications of negative galvanism to the canal at intervals of two days, in doses of not over 10 to 20 milliamperes two or three minutes, may be used at first, after the stem has been finally removed, if a tendency to rigidity or too much recontraction occurs; but this is seldom the case. It is usually appropriate to begin, after a few days, with positive galvanic applications to the endometrium every second or third day in doses of not over 30 to 50 milliamperes for three or five minutes. These latter applications tend not only to relieve the catarrhal condition of the endometrium, but also to tone up and stimulate the uterine muscular tissue, thereby aiding in effecting a permanent cure. It is appropriate also to follow every positive galvanic application by a five-minutes bipolar faradization of the vagina with the current of tension, which still further aids in restoring tone to the uterus and its supports and stimulates an increased and more normal menstruation.¹

¹ In treating patients of very sensitive nervous organization I use the faradic current through the rheostat, and find that they stand the applications much better, and that the current can be used stronger as the increase is more gradual. The secondary coil is advanced only half over the primary at first, and the rheostat is turned gradually half-way on. Then, leaving it at that point, the secondary coil is pushed all the way up, and the rheostat is again turned slowly until all the resistance is cut off and the patient receives the full strength of the current. This is important, as, to be effective, the

Where galvanism without forcible dilatation is elected to be used, the treatment will be commenced with negative applications to the uterine canal, unless extreme sensitiveness is present, when a few positive vaginal applications, 50 to 60 milliamperes, should precede the internal or intra-uterine treatment. These negative galvanic applications should be commenced with an electrode no larger than the uterine sound, fixed so as not to touch the fundus when introduced to its fullest extent—in fact, it is only necessary to enter about two inches, or just beyond the point of flexion.¹ The electrode may be passed preferably along the finger as a guide, or a speculum may be used if care is taken not to allow the metal portion of the electrode to come in contact with it. The current must be turned on as soon as the electrode enters the external os (10 or 15 milliamperes will be sufficient), and no force is to be used in its introduction, but rather let it slip in by its own weight. As soon as it has passed the angle it should be slowly withdrawn immediately at the first sitting. The external or inactive electrode is placed on the abdomen. At the second or third sitting, if the application is well tolerated, it may remain in for two or three minutes and the strength of the current may be increased to 20 milliamperes. As soon as the canal will allow it, the size of the electrode is to be increased one size at each sitting until the desired degree of dilatation has been accomplished; and the dose may be increased to 30 milliamperes, and the duration of the application may be lengthened to five minutes, if desired. In no instance will it be necessary to exceed 50 milliamperes, unless the tissues are unusually dense; and, when possible, it is best not to use even this strength, as

faradic current must be given as strong as possible; and it should be continued, where a sedative effect is desired, until it ceases to be felt by the patient.

¹ The electrode which I use is an insulated shaft larger than any of the metallic tips which screw into it, thus making a shoulder 2 or 2½ inches from its extremity. The tips are made of copper, nickel-plated, so they may be curved as desired, and are of different sizes, 9, 11, 13, 15, and 17 of the French scale. No. 9 corresponds in size with the ordinary uterine sound. The last two sizes are used exceptionally where an unusual degree of dilatation is required or when the uterus and canal are unusually large.

it is generally unnecessary and undesirable to cauterize the canal. In very old and obstinate cases of chronic metritis it may become necessary to exceed these doses in the later stages of the treatment, but generally it will not be required.

As soon as complete relaxation has been brought about by this treatment, the positive pole must be substituted for the negative for its tonic effect and for the cure of the endometritis. The platinum sound or the prepared steel must be used, and at first the strength of the current should not exceed 30 milliamperes, used for five minutes every second day, but may subsequently be increased to 50 or 60 milliamperes. Bipolar faradization of the vagina may be employed advantageously, as described above.

If more stimulation of the uterus is required, the faradic current may be applied to the cavity by means of the bipolar intra-uterine electrode. Used in this way it has a more direct effect upon the structure of the organ than when used in the vagina. But it is best not to do this until the galvanic applications have been dispensed with, or, at any rate, not at the same sitting.

RETROVERSION.

It will be necessary to separate the treatment of retroversion and retroflexion, although they are considered together by most authors, because they often exist separately and require a different line of treatment. Fixed retrodisplacements will likewise be considered separately, because their treatment presents certain difficulties which necessitate careful manipulation.

A retroverted uterus presents the same heavy, rigid condition as was shown to exist in anteversion, and there is likewise a metritis and endometritis, with sometimes a chronic posterior perimetritis or parametritis, or an exudation, as evidence of its previous existence. According to Schultze, there is relaxation of the utero-sacral ligaments, resulting from this posterior parametritis, in those cases which are permanent. The uterus can often be replaced when there is some exudation present, unless adhesions have formed, though pain may be provoked by the attempt.

The indications for treatment are the same as in anteversion. If the cervical canal is not free enough to allow proper

drainage, the negative pole in the uterus must be used at first, and this form of galvanism should be continued (unless a sensitive condition calls for the positive pole) until the rigidity of the organ has been overcome. The lateral posture of the patient, with the external electrode over the sacrum, is preferred, and the uterus, when reducible, should be thrown into proper position by the internal electrode and held there during the application. The applications may be repeated every second day, and the strength of the current may be from 30 to 60 millampères, used for five minutes. After each galvanic application a five- or ten-minutes bipolar faradization of the vagina is advisable (current of tension), and the uterus is braced in position by vaselined tampons. (If there is a tendency to menorrhagia, the faradic applications would tend to increase it, and they should be postponed until this has been overcome.) If the organ is found soft, yielding, and sensitive, with a dilated canal, as sometimes happens, the positive pole may be used to the cavity of the uterus from the start.

As soon as the rigidity of the organ has been overcome, the positive pole is indicated for its tonic effect and for the cure of the endometritis. A suitable pessary should be fitted, and the applications are made every second or third day for five minutes each time. The strength of the current may vary from 40 to 100 millampères. The faradic vaginal applications are continued throughout the treatment, at first the fine wire being used, and then the short, coarse wire coil.

RETROFLEXION.

Very much the same pathological condition is found external to the uterus with retroflexion as was shown to exist with retroversion, and the changes in the organ itself are similar to those found in antelexion. There may be a posterior parametritis, with exudation and more or less relaxation of the utero-sacral ligaments, though this is more often the condition where version and flexion are combined. There is loss of tone of the uterine walls, the posterior being shrunken and rigid while the anterior is unduly stretched. The body of the uterus is enlarged and heavy, and there is endometritis, with possibly a metritis also.

The peri-uterine changes are not always constant or pro-

nounced, especially in the so-called congenital variety of comparatively recent date, for cases are frequently seen where the changes in the uterine structure are the only abnormal conditions present.

The indications for treatment are: (1) To secure drainage for the catarrhal secretions; (2) to soften and relax the rigid posterior wall and render the organ mobile, so that it may be retained in a normal position; (3) to remove any existing parametritis or deposit, and (4) to bring about resolution of the diseased mucosa; then (5) to tone up the relaxed uterus and its supports.

The same condition of retroflexion calls for dilatation and the stem as was described when speaking of ante flexion.

The electrical treatment of this condition is the same as that of ante flexion, except that the external electrode must be placed over the sacrum, because the interpolar action is desired upon the posterior wall. (The lateral posture of the patient will be found more convenient.) The negative pole is used at the commencement, and the electrode should be the size of the uterine sound and insulated to within two inches of its extremity. This is gently introduced to the fundus, while a current of 10 to 15 milliampères is turned on, and is withdrawn almost immediately at the first application if there is any sensitiveness at the point of flexion. If pain is provoked and continues after the removal of the electrode, it may be quieted by a faradic vaginal application with the bipolar electrode (current of tension).

It may be best not to increase the size of the electrode for the first two or three applications, but at the second sitting the uterus may be thrown forward into normal position by gently rotating the electrode as soon as it has entered its full length, unless the reposition causes too much pain, when it may be delayed. It is well always to replace the organ as soon as possible, however, and continue the application with the uterus in position for two or three minutes. There is no advantage to be gained in attempting to brace up the uterus with tampons until it has become softened and capable of free flexion forward as well as backward, though there is no objection to a flat glycerin-gauze tampon when it is indicated. After two, or perhaps three, sittings, the size of the electrode

may be increased, the uterus being replaced every time while the current is turned on, and the strength may be increased to 20 or 30 milliamperes and used for two or three minutes only. In some cases, especially in the virgin uterus, the size need not be increased beyond the third size (No. 13 French), the others being used when an extreme degree of dilatation is required. And in the virgin uterus it will hardly be necessary to increase the current beyond 30 milliamperes used for five minutes. But in old chronic cases in the multiparous uterus it may become necessary to increase the strength of the current to 50 or 60 milliamperes.

When the uterus has become thoroughly softened and capable of retaining the normal position without support when the patient is in the lateral posture, the positive pole is to be substituted for the negative, and a five- to ten-minutes bipolar faradization of the vagina should be made immediately after. Also, the organ should receive sufficient support (at first from tampons and later a suitable pessary) to maintain the corrected position when the patient is on her feet.

This treatment by the positive pole, which should be at first every second day, and later every third or fourth day, should be continued until the uterus and its supports have been so toned up as to retain their normal position without artificial support. The strength of the current to be used will not need to be more than 30 to 40 milliamperes, used for five minutes, or 50 to 60 milliamperes for three or four minutes.

It may be added that there is much to be gained by lessening the pressure on the uterus from above by avoiding the use of corsets and exertions which increase it, and by avoiding constipation. The pessary should be worn for some time after active treatment has been suspended.

If a case is met which does not become toned up sufficiently under this plan of faradization, this current may be applied to the inside of the uterus by means of the intra-uterine bipolar electrode. This latter method of application acts more directly upon the muscular structure of the uterus and is more effective. The electrode must be introduced well up to the fundus, so that both metallic surfaces are within the cavity, as the application is very painful if one pole should happen to be in the cervix. Within the cavity, the current, when very

gradually increased, is quite as well borne as in the vagina.

This method of treatment has to recommend it the rational application of the different actions of the current in removing the cause and overcoming the effect of the malposition, and a fair degree of success may be reasonably expected if it is consistently carried out. Dilatation with the steel dilator produces a rapid softening of the uterine structure. The tunnelled stem allows free drainage from the cavity and produces further relaxation. Negative galvanism does the same thing in a more gradual manner. The uterine structure is softened, the canal is dilated, and the secretions, which are in the beginning thick and gelatinous, become liquefied and thin under its influence and drain away readily. Positive galvanism acts by toning up the muscular structure of the uterus; and by its direct caustic effect upon the endometrium a cure of the catarrhal conditions is brought about.

The effect produced by the faradic current upon impaired muscle tissue is too well known to require explanation here. But the equallizing effect upon the circulation of the pelvis of the secondary current from the long, fine wire, when used by the bipolar method, is not so generally understood, nor is its sedative effect half appreciated, or it would come into more general use.

FIXED RETRODISPLACEMENT.

When the uterus is fixed in this position by inflammatory adhesions or exudation, it can sometimes be restored by appropriate galvanic treatment, and if not always so as to retain the normal position without support, at least so that a pessary may be worn with comfort. Very careful manipulation is sometimes necessary to avoid lighting up a fresh attack of inflammation. In old chronic cases where there is little or no sensitiveness to touch, active treatment may be commenced at once, but otherwise the treatment must begin with positive galvanism of from 40 to 60 milliampères for five minutes, with the clay-covered carbon-ball electrode against the cervix or in the posterior cul-de-sac, and the external electrode over the sacrum. If this does not promptly relieve, bipolar faradization of the vagina every day for ten or fifteen minutes from the fine-wire coil should be used in addition. Cases which are

not relieved by this treatment, and where pain is a prominent symptom, must be given the combined currents (galvano-faradic), with positive pole and covered-ball electrode in the vagina and negative over the abdomen or sacrum. The switch-board of De Watteville will be found very convenient, but, in its absence, one pole of the galvanic battery is connected with the opposite pole of the faradic, and the other two poles used as if only one battery was in use. The galvanic is increased by means of the rheostat or the switch, according to the arrangement of the battery, and the faradic by advancing the secondary coil over the primary.

The active treatment consists of negative galvanism to the uterine canal with the bare metallic electrode the whole length of the canal, with the patient in the lateral posture and the external electrode over the sacrum. The strength of current to be employed is from 30 to 60 milliampères, used for five minutes every second day. At first no attempt should be made to lift up the uterus, and the electrode must have a suitable curve so as to enter freely without provoking irritation. A flat glycerin-gauze tampon may be introduced after each application, but no packing should be used until the tissues have become softened and relaxed.

After three, or at most six, applications of this kind, stretching and loosening of the attachments may be attempted with the electrode in position, and while the current is in action, by depressing the handle of the electrode toward the perineum. Following the applications now, vaselined tampons, packed well up behind the cervix and then filling the vagina, will prove a valuable aid. Each time a little more is accomplished. The size of the electrode is increased and the curve is lessened. After a while it will be possible to rotate the electrode in the uterus and hold it in position during the application. A systematic continuance of this method of treatment will in the majority of cases, after a variable length of time, cause an absorption of the deposit and allow the adhesions to be stretched and loosened, and the organ can be made to resume somewhat its normal position. It may be maintained by tampons until a suitable pessary can be borne, when it will be necessary to use, in addition to galvanism, the faradic current, first from the long wire, and later from the

short, coarse-wire coil; and it may be applied either by the bipolar method to the vagina, or with one pole in the vagina and the other over the sacrum or abdomen, as appears best suited to the case in hand.

Should there be a tendency to metrorrhagia or menorrhagia, the treatment must be commenced with positive galvanism to the uterine canal until this is overcome. Commencing with a current of 50 milliamperes, it may be progressively increased to 100 or 150 milliamperes, when necessary to accomplish the desired result. Then the negative pole may be used, as before described, with little fear of reproducing it. A bloody discharge from the uterus is sometimes kept up by the interference with the circulation caused by a deposit or an irritation of the endometrium by pent-up discharges in the cavity. This would only be aggravated by the positive pole, for the indication is to free the canal for drainage and soften and remove the deposit. In this instance the negative is the pole to be used, but the dose may be so modified as not to produce undue irritation.

It must be understood that if a distinct exudation tumor is present it should be attacked through the vagina by applications of negative galvanism with the ball electrode covered with cotton or clay, or by galvano-puncture into the mass. If sensitive and painful, the positive pole should be used first. When the ball electrode is used, full doses will be required, ranging from 60 to 150 milliamperes, used for five minutes only. I prefer the galvano-puncture for these exudations, because it acts more promptly; but it is contra-indicated when there is any inflammatory condition present. If the tumor is sensitive to touch and much pain is complained of, the positive puncture with 30 to 50 milliamperes for three or five minutes will afford marked relief, and rapid diminution in the size of the mass will sometimes be obtained. Negative puncture will be more effective in old chronic exudates which are painless and insensitive. The needle should be no larger than a small-sized exploring needle, and the penetration need not exceed one centimetre. The insulating sheath is passed along the finger as a guide, and is held firmly against the tumor as felt in the vagina, while the needle is passed through the sheath and into it. The puncture should not be repeated for a week

or ten days. Thorough antiseptic precautions must be observed by using an antiseptic vaginal douche both before and after the operation, and placing in the vagina a loose tampon of creolin or iodoform gauze, which is to be renewed every twenty-four hours.

VOMITING OF PREGNANCY.

BY

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Guelph, Canada.

For many generations the obstinate vomiting of pregnancy has engaged the most earnest consideration of the medical profession. Remedies innumerable have been suggested as sure to cure this intractable condition. It requires but a few years of practical experience to prove to any medical practitioner that in some obstinate cases no remedy has any effect whatever.

Cerium and bismuth, so often useful to allay varying forms of gastric irritability, sometimes do good in this affection, but more frequently they fail. So also benefit is occasionally derived from the use of hydrocyanic acid, nux vomica, calumba, pepsin, and alcohol. Some observers report good results from the use of iodine, carbolic acid, creosote, Fowler's solution, ingluvin, painting the os with solution of silver nitrate, etc.

The administration of potassium bromide in 3 i. doses per rectum was suggested in 1878 by Dr. Busey,¹ of Washington, who advised that it be given in warm milk or beef tea, and repeated every four hours till the vomiting ceased.

The old practice of slightly dilating the os uteri, originally suggested by Dubois, has been revived, and many cases have been reported in which this simple proceeding seemed to terminate the vomiting almost immediately. Even this measure, however, fails far more frequently than it succeeds.

¹ Am. Journal of Med. Sciences.

The induction of abortion or premature labor is justly regarded as a *dernier ressort*. It is usually so late before it is resorted to that the poor patient, exhausted by weeks of incessant vomiting and consequent inanition, has almost no chance to pass safely through it.

In the obstinate vomiting of early pregnancy I think it will be found in most cases that the position of the uterus requires correction. Dr. Graily Hewitt has said that "displacement of the uterus is the almost universal cause of the vomiting of pregnancy." In debilitated women it is very easy to understand that the ordinary vomiting of early pregnancy may force the uterus into a position of acute flexion in the pelvis. The persistence of the vomiting and straining increases the displacement; and no doubt this acute flexion greatly aggravates the nausea and vomiting, thus establishing a vicious circle. To relieve this condition a speculum should be introduced and the vagina packed with absorbent cotton, so that the uterus may be raised and the flexion corrected as far as practicable.

In my own experience I have resorted to this method in two cases only, and in both the vomiting ceased almost immediately.

CASE I.—MRS. E., 23 years of age, in her second pregnancy. She had been vomiting almost incessantly for three weeks before I was called. Notwithstanding the persevering use of all the ordinary remedies, the vomiting continued until the patient's condition became truly critical. Dilatation of the external os had no effect whatever. Finding the uterus crowded down into the pelvis with acute ante flexion, I packed the vagina with absorbent cotton, with the object of correcting the flexion and elevating the uterus. For a week the packing was renewed each day. Afterwards I introduced a pessary, which she wore for six weeks. The vomiting ceased the first day, and in a month the patient had gained twenty pounds. She went to full term without a relapse.

CASE II.—A young, anemic married woman, 20 years of age. She missed one period; a second about due. She had been vomiting everything she took for two weeks. After the unsuccessful use of the many ordinary remedies, I found a small uterus, ante flexed and crowded low down in the pelvis.

The same treatment was adopted, with the most speedy relief. The patient vomited only once after the first packing. The case is still under observation, but she is so well that she is able to attend to her household duties.

I am well aware that two cases afford no proper basis from which to draw an inference as to practice. Yet these patients were in such a critical condition that the induction of abortion was in contemplation. The effect of the treatment was so direct and immediate that I think I am justified in asking my professional brethren to use this method before resorting to abortion in those cases of vomiting in early pregnancy that resist all ordinary means.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, November 4th, 1890.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

PROBABLE COEXISTENCE OF MYOMATA AND MALIGNANT DISEASE OF THE UTERUS.

DR. FLORIAN KRUG presented the specimen from the case to which he referred in a discussion at the last meeting. The patient was 57 years of age; first came under his observation in June last, having had severe hemorrhages for some time. The family physician had curetted the uterus and tried different means to control the hemorrhage, but without success. The uterus was large, admitted a sound to the depth of five inches; the condition of the cavity suggested malignant disease. Some of the curettings were submitted to a microscopist, who made the positive diagnosis of carcinoma. The patient would not take his advice to undergo an operation at once, but went to the country, returning again in the fall, when she was also seen by Dr. T. G. Thomas. The uterus was curetted again, and another microscopist made the diagnosis of adenomatous hyperplasia. The woman had been bleeding right along, and Dr. Thomas also considered it advisable to give her the benefit of the doubt and operate. Besides much enlargement of the uterus, a mass could be felt in the right side of the organ which was shown, after the operation, to be a subserous myoma; there was also a small-pediced, subserous

fibroid in the left side of the uterus. The cavity having been thoroughly curetted some days before the operation, it showed little that was pathological. The case was interesting, although not conclusive, as showing the coexistence of myoma and malignant disease.

The operation required about fifty minutes, the large size of the uterus being the only hindrance to its removal in a shorter time. No clamps were used. As he had said on former occasions, he regarded the use of clamps as unsurgical whenever ligatures could be applied. One would not think of using clamps and leaving them on in general surgery when it was possible to apply a ligature, and he thought the same rule should hold in hysterectomy. The patient made an excellent recovery, retaining practically a normal temperature throughout.

UTERINE MYOMA WITH CANCER OF THE CERVIX.⁷

DR. KRUG related the history of a second case, the specimen not being at hand. The patient was 47 years of age; had been married twenty-four years; had had three children, the last one born eight years ago. Menstruation normal up to five months ago, since which time it had been very profuse, prolonged, and painful. For the last three months there had been pain, severe hemorrhages, and a fetid vaginal discharge. General emaciation. Uterus large, not adherent; cervix very large, infiltrated, ulcerations around the os. Appendages normal. Vaginal hysterectomy was performed April 11th; no clamps were used. Uninterrupted recovery, patient being discharged in three weeks. There had been no sign of return. The examination of the specimen showed myoma and epithelioma of the cervix.

REMOVAL OF THE UTERUS AND THE APPENDAGES FOR PROLAPSUS.

DR. KRUG presented the uterus and appendages from a third case, that of a woman aged 32, who had prolapsus of the uterus and both ovaries, with very lax abdominal walls. She had been married twelve years; given birth to nine children, the last one born in June, 1889. Menstruation had been normal, but lately she had complained of dragging-down pains and trouble with defecation and urination.

Her husband had recently died in an insane asylum, and she had no one to support her. She had accepted a situation as a servant, but was obliged to give it up on account of severe pain and inability to walk.

There was a cystocele, a rectocele, and prolapsus of the uterus to the entrance of the vagina; both ovaries and tubes were also prolapsed, and could be felt below the cervix. The abdominal walls were so relaxed that they could be stretched a

distance of a foot. She could not wear a pessary. Hysterorrhaphy and Alexander's operation were impracticable because of the very relaxed condition of all the tissues. He was unable to comprehend how electricity could have been of any benefit to her. It did not seem right that a patient aged only 32 should enter a charitable institution to be supported by the public the remainder of her life. After considerable thought and consultation he decided that hysterectomy would be best, all things considered. It was his intention to do a plastic operation and close the vagina at the same sitting, but in removing the uterus he failed to catch up one of the arteries properly by the ligature, which caused some delay and loss of blood, consequently the operation on the vagina was postponed. Without it an enterocele would doubtless form. The patient was rapidly convalescing from the hysterectomy.

DR. GRANDIN said he had had the pleasure of witnessing the operation for hysterectomy in the last case. It was the only possible procedure under the circumstances. The woman's tissues were in so relaxed and flabby a condition that hysterorrhaphy or Alexander's operation, associated with a plastic operation on the anterior and posterior walls of the vagina, would surely have failed. He therefore thought Dr. Krug was fully justified in subjecting the patient to the risk attending the major operation, for unquestionably it was attended by risk. But in this instance, owing to the relaxed condition of the tissues, he thought the risk of hysterectomy per vaginam was no greater than it would have been had he opened the belly to do hysterorrhaphy. While on general principles he was opposed to hysterectomy through the vagina, except in certain selected cases, yet he thought it was in this case a justifiable operation. If the operator should follow it up by closing the vagina, he thought the patient would be cured. Of course, if he failed to do this, her last condition would be worse than the first.

DR. H. C. COE stated that he had reported, about eighteen months ago, a case of hysterectomy for procidentia, with a plastic operation against rectocele, cystocele, and prolapsus of the vagina. It seemed to him the operation was a favorable one in certain cases, although in this instance he was unable to state what would have been the final result, as the patient died some months later in an asylum for the insane.

DR. A. H. GOELET thought electricity should be tried in cases like the first one related by Dr. Krug, in which there was a doubt as to the exact pathological condition present. It certainly would have controlled the hemorrhage, which, according to his understanding of the case, was the principal reason for the operation, aside from a possible malignant dis-

ease of the uterus. The symptoms being relieved, the operator could wait until the diagnosis was cleared up.

THE PRESIDENT inquired of Dr. Krug whether he had any special reasons for preferring ligatures to clamps.

DR. KRUG replied that he had performed vaginal hysterectomy twelve times, and had lost but one patient, it being the only case in which he had employed forceps instead of ligatures. The clamps were removed thirty-six hours after the operation, at which time the patient was doing well. The next day she was not so well, and died seven or eight days after the operation of septic peritonitis, arising, as the autopsy showed, from broken-down blood clots. There had been no hemorrhage during the operation. It seemed, therefore, that the clamps had not obtained complete control over hemorrhage, or had caused a fresh one when they were removed. Although other operators had removed them as early as twenty-four or even eighteen hours after the operation, he did not consider them as safe as ligatures. All his other cases had made an uninterrupted recovery, except one in which there was an ileo-vaginal fistula; this patient also finally recovered. As already stated, he thought it better surgery to use ligatures where this was possible. It might be claimed that the operation could be performed quicker when clamps were used. This, however, was hardly worth consideration, for he had consumed only fifteen minutes from the time he took up the scalpel until the patient was put back to bed, it being in a case in which he wished anesthesia to be as short as possible on account of the urine containing five per cent of sugar. When ligatures were used, he felt safe on returning to his home; not so when clamps were left on. He added that it was his custom to let the ends of the silk ligatures remain long, in order that there might be perfect drainage directly from the spot at which it was needed most.

THE PRESIDENT read the following pathological report on the specimen of

UTERINE CARCINOMA

presented by him at the last meeting, Dr. William H. Porter being the examiner:

"I have examined a number of sections from the uterus removed by you from Mrs. B., and find about the same appearances in all. The cavity of the body of the uterus had the appearance of having been considerably dilated during life. It was lined by a shaggy, soft layer, no evidence whatever of a mucous lining being present. This lining layer down to the muscular tissue was found, when examined microscopically, to be composed chiefly of carcinomatous tissue. Scattered through this, but at rather wide intervals, were patches

of an adenoid hypertrophy of the utricular follicular lining of the uterus. In fact, the whole epithelial lining of the uterus had been changed into an adenoid hypertrophy of the same and into carcinomatous tissue. The character of the carcinomatous growth was of the soft or medullary type. This at first gave the impression that the neoplastic tissue was of the sarcomatous class of growths. But the microscope showed well-defined but delicate alveolar walls, the cavities of which were filled with irregularly placed epithelial cells. Another interesting point in connection with this specimen was the fact that the new growth had but little tendency to invade the muscular wall of the uterus, it resting upon the muscular coat and growing outward into the uterine cavity."

The President added that from this examination the case was shown to be one of carcinoma, while at the same time there did exist a small fibroma in the uterus. In other words, it afforded absolute proof that the two diseases might coexist in the same uterus.

As bearing on the use of clamps, the President said further that this patient died late Saturday night, the operation having been performed Wednesday afternoon; that he removed the clamps, two on either side, forty hours after the operation. He believed that, owing to the surroundings of the place in which the operation was performed, infection took place when the forceps and dressings were changed. Up to that time everything had been perfectly well, and continued so until twelve hours later, when peritonitis set in. At the autopsy Sunday morning nothing was found except some plastic exudation and about a drachm of an extremely offensive brownish serum. There had been no hemorrhage whatever after removal of the clamps, nor had he any reason to believe that in any of his cases there had been any hemorrhage subsequent to their removal.

The paper of the evening was then read by Dr. A. H. GOELET, entitled

THE RATIONAL TREATMENT OF UTERINE DISPLACEMENTS, BASED
UPON A CONSIDERATION OF THE PATHOLOGICAL CON-
DITIONS PRESENT.¹

DR. G. BETTON MASSEY, of Philadelphia (present by invitation), said his thoughts had run very much in the same line as the author's. He would, however, hesitate somewhat to treat of these conditions under the heading displacements. In looking over his clinical notes he had found that many similar cases in his practice had been noted under the head of me-

¹ See original article, page 185.

tritis or endometritis, or of inflammatory conditions, with displacements complicating or attending upon them. Yet he must say that the author had belittled the importance of malposition as such.

He thought we should get rid of the ultra-mechanical view when discussing the subject of displacements. He regarded the displacements as secondary, and thought the cases might be divided into two classes: first, displacements with movable uteri; second, displacements with fixed uteri.

As to treatment, he coincided almost *in toto* with the author. He would, however, go further in the abandonment of pessaries, and, as they were yet largely used by the profession, he thought the unnatural theory on which they were based should be even more strongly brought out than had been done in the paper. It was certainly in contradiction of nature to place a skeleton in a woman's vagina. Nature never placed a skeleton there, and he could not conceive of our improving upon nature in that one point. Nor had he ever yet been able to trace any distinct advantage to the use of the tampon as a support. He had found that a woman at all sensitive objected to the irritation of the tampon. Practically he had been able to reduce his use of pessaries to bad and chronic cases of movable retroflexions and very bad cases of prolapsus which were hopeless from any other method of treatment.

The electrical treatment in these conditions would so frequently effect a cure that we had no need to resort to a pessary. He differed from the author in the use of tampons in the after-treatment; they were dirty things, even if rendered aseptic before introduction, and almost always caused irritation. He preferred to let the vagina act as nature had provided, as a drainage tube. Put the tampon on the outside.

He made his dosage, amount, and frequency in electrical treatment very similar to Dr. Goelet in cases of misplaced movable uteri. He thought we should recognize that that which was at the bottom of nearly all such conditions was metritis. What we should cure was the metritis; that cured, the misplacement would take care of itself, whether it was ante flexion, retroflexion, version, or prolapsus. He knew of numerous instances in which the uterus had ascended and taken its proper place simply because the oversize had been reduced by galvanic or faradic treatment. In one case the lady had had prolapsus in the first degree for fourteen years, in spite of very skilful treatment of a non-electrical kind. After two months' electrical treatment she was enabled to spend a whole summer in perfect comfort, and this fall had shown no return of the symptoms.

Cases of ante flexion of moderate degree had been very numerous in his practice; he had yet to find one, however, in

which there was strictly a stenosis. He had never found anything retained in the uterus from anteflexion, and he must still look upon cases of anteflexion with painful menstruation as cases of spasmodic contraction of the sphincter of the cervix. He was able to treat them without dilatation, and must also say that the author's intra-uterine galvanic applications came rather close together. While he had seen no disadvantage from frequent treatments, yet he had found it consonant with his own ideas to respect the uterine cavity as much as possible, to go into it as little as possible, and he had adopted the plan of alternating the intra-uterine treatment with a good many vaginal ones. He gave, for instance, one intra-uterine treatment, followed by two vaginal ones before repeating the intra-uterine. He believed cases treated in that way had gotten well as fast. He would also suggest caution in the movement of the electrode while the current was on—a heavy current. Of course in the author's hands this was entirely safe, but he doubted whether it would be in the hands of the tyro. While he thought, as stated, that uterine engorgement and inflammation was the principal pathological condition in the majority of these cases, he recognized the necessity of support in many, which should be rather by toning up the muscles than by distending them. Both currents were efficient in this particular, and his more recent experience had convinced him that, unless the vaginal muscular tissue had totally disappeared, the results obtained by electricity were practical as well as plausible.

DR. E. L. H. MCGINNIS said that Dr. Goelet had expressed his own views so well in many respects that there was little left for him to speak upon. He might remark, however, that in misplacements of the uterus he did not regard tampons and pessaries as useless as did some. He believed they had their place, as had everything else. He thought electricity also had its place. Certain cases were treated better by one means, others better by other means.

His experience in the treatment of misplacements of the uterus by electricity had been favorable. He thought its principal place was in cases in which the uterus was retro-placed and bound down by firm adhesions. There was such a condition that if the uterus were replaced by the sound a fresh inflammation would surely be set up. To reduce the inflammation by the old means of painting the posterior cul-de-sac with Churchill's iodine and the use of tampons, was well, but the method was slow. There was no doubt in his mind that by the proper use of electricity, especially by the use of the bipolar intravaginal faradic current, the result was much quicker and quite as satisfactory. He recalled one case in Dr. Cleveland's service at the Woman's Hospital. The patient had been under the care of physicians in the city sev-

eral months last season, and the old principle in treatment had been carried out, but she had got no better. She returned home during the summer, and in the fall came to the hospital, where she came under his care, and had received electrical treatment since the first of October. The inflammation had been reduced already during the one month far more than it had during the six or seven months under former treatment. The uterus had been replaced several times without causing any pain. In cases similar to this one there could be no question of the utility of the faradic or galvanic current, although he had little to say about the galvanic current, having been so well satisfied with the faradic.

Instead of placing one pole on the sacrum, as the author had recommended, in retroversion, Dr. McGinnis would place it on the abdomen (the other being in the uterus), so that when muscular contraction should take place the organ would be lifted upward and forward instead of being pulled back.

DR. E. H. GRANDIN had had considerable experience with electrical treatment in displacements, and altogether his results had been rather better than before he had used electricity as an adjuvant to the routine methods. But his position with regard to displacements of the uterus would differ somewhat from Dr. Goelet's. It did not matter to him particularly whether the uterus were tilted more or less forward or backward, but he was concerned when the uterus sank down toward the floor of the pelvis. His aim was not so much to cause the uterus to cease falling backward or forward as, if possible, to cure the cause of the sagging; this, in his experience, had uniformly been the cause of the symptoms. He was then speaking of cases uncomplicated by peri-uterine adhesions. In other words, he aimed at the relief of the endometritis, which was the prime factor in causing the uterus to sag, thereby giving rise to pain in the back and distention of the abdomen. By the use of positive intra-uterine galvanism he was certainly able to cure the endometritis quicker than formerly; and in curing the endometritis he was enabled to dispense with the pessary, for he relieved thereby the dragging pain in the back and the distention of the abdomen which necessitated the use of a pessary.

Anteversion, in his experience, might generally be neglected unless it was accompanied by sagging and traction on the bladder. When it came to flexions, however, it became a matter of choosing between an operation and no operation. Given a case of flexion associated with dysmenorrhea, particularly in an unmarried woman, the dysmenorrhea being due, not to ovarian, tubal, or peri-uterine trouble, but to the endometritis which accompanied the flexion, he could cure the patient in one of two ways, either by divulsion and such mea-

tures as were applicable to an endometritis, or by the use of negative galvanism, ten milliampères, thus dilating, after which positive galvanism was employed.

When it came to the last class of cases considered in the paper—versions and flexions accompanied by peri-uterine inflammatory exudations—he was on the fence; he did not know whether he could or could not do these patients good by electricity. He had tried positive vagino-abdominal galvanism and had failed to cure them. He palliated them uniformly, but failed to cure. He had also tried the bipolar method, and, while relieving the symptoms, failed to cure. The patient came back after a while, complaining as much as ever.

The only exception which he would take to the paper was with regard to intra-uterine applications where the uterus was bound down by adhesions, however chronic they might be. He was afraid to introduce the electrode to the fundus, just as he was afraid in such cases to introduce the uterine sound, for the reason that he could never be assured that hidden in the adhesions there was not a pyo-salpinx or an ovary with an abscess in its centre. If there were acute peri-uterine exudates he certainly would oppose the treatment. He would not go further than to make use of vagino-abdominal galvanism or bipolar vaginal faradism.

DR. J. H. GUNNING said, with regard to the use of pessaries and tampons in the treatment of displacements, that he had overcome the necessity for their use by substituting position. This was employed, not alone during the electrical séance, but also between. So far as concerned the action of the current upon uteri bound down by adhesions, he had never seen the slightest amount of good. The uterus remained in just the same position, no matter how the electricity might be given. He had found the bipolar treatment, after the manner described, give relief to pain and sensitiveness. But in severe cases he had seen little curative effect.

DR. R. A. MURRAY inquired whether, during the intervals between the sittings, the author employed other means of treatment, such as hot douches, astringents, position, exercise, etc. While he had used electricity a good deal in these cases, he had yet to find it of service except in enabling him to dilate the cervix without the use of the dilator, and to relieve pain, and, by relieving pain, even enabling him to replace the uterus by the finger—this being, he believed, the only proper way to replace the uterus. One should very, very seldom introduce the sound in order to replace the womb. Only a few evenings since a physician told him of a case in which the introduction of the uterine sound had been the cause of peritonitis and death. This result had taken place in some instances where the sound was not dirty. He believed that if

the electrode were introduced into the uterus much in general practice, it would be the cause in a good many cases of exciting perimetritis. He believed in the treatment of placing the patient in the knee-chest position, lifting the uterus if possible, inserting a tampon into the vagina, or, if a pessary could be used, employing that. If the author employed the other means mentioned during the intervals, his electrical treatment may have been only a slight adjuvant.

DR. A. P. DUDLEY said he had not inferred from the title of the paper, "The Rational Treatment of Uterine Displacements, based upon a Consideration of the Pathological Conditions Present," that the author simply intended to discuss the electrical treatment. While, therefore, he was not fully prepared to speak upon the subject, yet he would venture to ask a few questions on some points which had not been made perfectly plain to his mind. For instance, the author had said that anteversion and antelexion were usually caused by endometritis and metritis. For his own part, he had seldom seen a chronic metritis and endometritis in anteversions of the uterus, especially in young people. He had seen chronic endometritis in antelexions. He would like to know what the author meant by chronic metritis. It seemed to him rather an indefinite term. (Chronic metritis literally would mean a chronic destruction of tissue of the womb?)

Then the author had spoken of applying the electricity in a certain manner, namely, the negative pole within the uterus in order to soften it, in cases of displacement; and after lifting it, he applied the opposite pole in order to harden the organ, to tone it up. It impressed the speaker as rather inconsistent to speak of softening the uterus in order to lift it, and then harden it, or tone it up, so that it would support itself.

Again, it would seem from the paper that electricity would cure all these different forms of displacement. He had noticed, however, that the author had not said much about peri-uterine exudations, and in that he thought he was wise. One seldom found a retrodisplacement of long standing which had not become complicated in some way, and while he would admit that electricity was a good thing in simple cases, yet in the complicated ones he did not think it was altogether safe. The author, he believed, had said that galvanism was contra-indicated when inflammatory conditions were present, yet he elsewhere claimed that these inflammatory conditions could be cured by electricity. These apparently conflicting statements confused him a little.

He contended that the endometritis was secondary, not primary, in the majority of cases, and he felt that one was taking great risk in treating them all with electricity. If electricity was really as effectual as had been claimed for it, he

thought it would have been eminently the mode of treatment in the case related by Dr. Krug, in which all the abdominal and pelvic tissues were in such a relaxed state; and if this was the rational treatment, as the title of the paper indicated, then the thousands of cases of laparotomy that had been made must certainly have been irrational.

It seemed to him improbable that electricity would cause absorption of exudates binding down the uterus, then soften it by means of one current so that it could be lifted, and then tone and harden the organ when the poles were reversed.

DR. GOELET, replying to Dr. Massey's remarks, said he had laid stress upon the influence of metritis and endometritis. Pessaries could be dispensed with in anterior displacements, and he supposed also in posterior displacements; he probably had continued their use to some extent because he had found them the most reliable means before he commenced using electricity.

Replying to questions by other speakers, he would say that he had never seen a case of ante flexion in which there was not more or less endometritis. He had dilated in probably four or five hundred cases, mostly in patients who had never been pregnant. If the applications were of short duration, the effect was better, and they could be made oftener with benefit.

DR. DUDLEY, interrupting, inquired what the speaker regarded as endometritis.

DR. GOELET said he referred to a catarrhal condition, a catarrhal endometritis, provoked by retained secretions which became vitiated.

DR. DUDLEY.—It is simply an increase of the natural secretion, is it not?

DR. GOELET replied that there was not only an increase over the usual amount of secretion, but that it set up an irritable condition of the uterus and its lining membrane. It was that which produced dysmenorrhea in the majority of cases. That was to say, he thought dysmenorrhea was more frequently produced by a catarrhal condition of the endometrium than by anything else. The relief coming from dilatation of the canal was not due so much to overcoming an obstruction to menstruation as to curing the endometritis by favoring free drainage from the cavity.

The electrical applications in this class of cases had a better effect when of short duration and frequently made; he preferred three minutes to five minutes. An analogous action was seen in a papular eruption of the skin, where, if the positive pole, eight or ten milliamperes, were applied two or three minutes, the blood would be driven out and the surface would become pale, whereas if the current were continued longer the parts would become reddened. The first effect was sedative.

He could see no objection to moving the electrode in the uterus with the current turned on, if done in the manner he had indicated.

According to Dr. Dudley, he had not said much about per-uterine changes. The speaker, on the contrary, thought he had said a good deal about them. He had spoken of puncture, and of having more confidence in electrical treatment here than in anything else. In fact, he knew of nothing else which would remove the deposits so rapidly and completely. He had had more success in the treatment of displacements with electricity than in the treatment of any other condition by the same agent. He had said the puncture was contra-indicated when active inflammatory action was present, but there was no objection to it when the exudation was chronic. If he (Dr. Dudley) would study the actions of the current and their effects closely, he would not feel so muddled about it; and if he would read the paper carefully he would see that it had been made perfectly clear. The speaker did not think that he had claimed much more for electricity than had been claimed for the treatment by iodine, the hot-water douches, and the tampon by Dr. Harrison in his paper in the "American System of Gynecology."

In reply to Dr. Murray he said he no longer used iodine or douches. The only aid or auxiliary to the electric treatment employed by him was the vaseline or glycerin tampon. These he adhered to, although they might be dispensed with, and had been by some.

It seemed to him that Dr. Murray's statement, that he used galvanism to relieve pain, so that he could replace the uterus with his finger, offered a very good argument in favor of the treatment of displacements by electricity. The speaker objected to the ordinary method of replacing the uterus by the sound. But when the current was turned on, an anesthetic effect was produced, the sound could be rotated, and the uterus replaced with much greater ease and much less discomfort. The negative pole was used, which softened the tissues and loosened the adhesions. This softening and relaxing effect of the negative pole was demonstrated by the fact that the electrode would slip out if not held in place. With the positive pole, if allowed to remain a few moments, the electrode would be retained by the coagulation of the secretions.

He was glad to hear that Dr. Grandin had had some success in this line of treatment. If he were to follow it out a little more boldly and use the intra-uterine applications as advised in the paper, he would no longer be on the fence. The object of his paper had been to show what could be accomplished, and how others might apply the same treatment with like success. The electrical treatment could not, of

course, cure abscesses of the ovaries, nor be of benefit in certain conditions where it was well recognized that laparotomy for the removal of diseased structures was the only safe plan. But in those cases where there is a doubt about the advisability of that operation, very much could often be accomplished by its use.

DR. DUDLEY wished to know in what way electricity relieved the adhesions which bound down the uterus in certain cases of displacement.

DR. GOELET said the principle was the same as in the treatment of fibroids of the uterus by electricity. There the uterus was large, heavy, and low in the pelvis, and often confined by adhesions. On giving negative galvanism the first effect was a rising of the tumor and uterus in the pelvis, produced by loosening of the adhesions. That was an accepted fact among those who employed electricity in these cases. He employed massage as an aid in overcoming the adhesions in some cases. The result was brought about more easily and in a much shorter time than under the older methods of iodine applications, the hot douche, etc. He had recommended this plan of treatment of uterine displacements because it had been successful in his hands and more satisfactory than any other method known to him, and he had been actively engaged in the practice of gynecology for fifteen years.

DO THE GENERAL SYMPTOMS JUSTIFY PRIMARY LAPARATOMY
EARLY IN EXTRA-UTERINE PREGNANCY? (A REFERENCE
TO THE SOCIETY'S RECORDS.)

DR. E. H. GRANDIN having stated, at the last meeting of the Society, what he believed were the views of certain members with regard to the indications for primary laparotomy early in supposed extra-uterine pregnancy, was requested to confirm them by reference to the Transactions.

In rising to make his statement he expressed regret that some of the members who took exception to his remarks on that evening were not present at this meeting. He had found, by reference to the Transactions of the Society, that the statements which he had had in mind were not made on the evening to which Dr. Cleveland referred. Thus Dr. Cleveland was right and he was wrong. But they had been made on another occasion.

In the JOURNAL OF OBSTETRICS for June, 1888, page 613, Transactions of the Obstetrical Society of New York, Dr. Janvrin, speaking of tubal pregnancy, said: "In all these cases, from the sixth to the twelfth week of gestation, the pretty severe attacks of colicky pain, with the other general symptoms, should lead us all to diagnosticate the condition, and when we were fully convinced that there is tubal preg-

nancy, even if there has been no decided hemorrhage and the patient's life is in no immediate danger, it is best to perform laparotomy."

That was to say, Dr. Grandin added, the general symptoms—colicky pain, amenorrhea, irregular discharges, and passage of a decidua—being present should lead us to a diagnosis and thence to primary laparotomy. Adding the words "general symptoms" to his own remarks at the last meeting, he contended that he was justified in the statements which he then made. He believed that if Dr. Polk were now present he would gladly retract his assertion that the man making such a statement as he had quoted was either dishonest or incompetent.

Dr. Grandin also referred to a remark which the stenographer had understood Dr. Wylie to make, as follows: "He did not think it was fair for the reader of the paper [Dr. Grandin] to allude to unpublished private cases in which a mistake had been made in diagnosis."

The cases to which he had referred, he said, appeared in the Transactions of the Society, and assuredly there could be nothing unfair in quoting what had become matter of public record. If so, then every member of the Society had been guilty of being unfair repeatedly. The following were the cases which he had had in mind: AMERICAN JOURNAL OF OBSTETRICS, January, 1890, page 75, Dr. Janvrin reported a case of supposed extra-uterine pregnancy, operated upon by another gentleman, uterine pregnancy found; same journal, January, 1890, page 94, Dr. Coe had the courage to report a case of laparotomy for supposed extra-uterine pregnancy, showing an error in diagnosis; Dr. Mundé, at the meeting when Dr. Tuttle reported four cases of extra-uterine pregnancy, reported a case of supposed extra-uterine pregnancy, laparotomy, pregnancy in a bicornate uterus was found. He was perfectly willing to leave the question as to whether he had been unfair in referring to recorded cases to the judgment of the individual members of the Society. He did not doubt the verdict. Personally he repudiated the charge.

DR. CLEVELAND wished to say that the only point which he wished to protest against at the last meeting, and he thought it was true of others who spoke also, was "that there were gentlemen in this Society who, given a case like that which Dr. Grandin had narrated, would proceed to do laparotomy."

DR. GRANDIN added that it was not alone the impression which the members of this Society would obtain on reading such statements as he had read from the Transactions, which concerned us; it was also the impression which Dr. Smith might get who lived in Kalamazoo or anywhere else. In the case which he had reported at the last meeting, it should be

remembered that fully six months before he saw the patient the symptoms were amenorrhea, followed by colicky pains, irregular hemorrhages, the passage of a decidua. Here were the *general* symptoms of extra-uterine pregnancy. He could, of course, make no statement in regard to the *local* findings at this time. He did not see the patient then. He had simply protested against the view that the *general* symptoms would justify primary laparotomy, and he protested still.

DR. COE called attention to the fact that in reporting his case of error in diagnosis he had mentioned distinctly that there was an enlargement, a tumor, which was an extremely important point. Besides, there were some symptoms of rupture.

DR. JACOBUS, on reading certain portions of the records, thought they showed the statement on the part of Dr. Grandin to imply that "judging by the statements of the gentlemen as they were recorded in the Transactions, they would, in a case like his, have performed laparotomy."

So far as the question of the existence of a tumor was concerned, cases had been cited by members of the Society and others in which, among other signs of extra-uterine pregnancy, an extra-uterine tumor was supposed to have been present, yet laparotomy showed an error in diagnosis and no such tumor, but instead, in some cases, uterine pregnancy.

DR. COE remarked that in his case there was a small ovarian cyst.

THE PRESIDENT said that, given the symptoms of tubal pregnancy, he had placed himself on record as favoring primary laparotomy. It therefore became simply a question of what one regarded as the symptoms. He had, during the past three or four years, read several papers in which he had tabulated these symptoms, and among them he had mentioned a mass or tumor on one side of the uterus. If he had neglected to do so at the time of the discussion referred to by Dr. Grandin, it was because he supposed that his views had already become so well known that it was unnecessary to repeat them. Under the circumstances, moreover, the term "general symptoms" might justly have been supposed to include a tumor.

With regard to the case which he had related, in which laparotomy was performed by another physician and pregnancy found in the left horn of the uterus, he had distinctly stated that all the symptoms of tubal pregnancy were not present, yet the patient was in a pretty critical condition, and he coincided with the gentleman that it would be well to do laparotomy, and he would give him what assistance he could. He was not very much astonished at the result of the exploration.

DR. GRANDIN expressed his willingness to insert the words "general" symptoms in his remarks. The point at issue was whether the word "general" could by any possibility be taken as including "local" symptoms. He had been challenged to find a certain statement in the Transactions. He had found such a statement. We could not now explain statements made in the past. He, of course, knew Dr. Janvrin's views. Others, at a distance, might not. What was the inference which could rationally be drawn from the statement he had read by these others? Only one: Given the *general* symptoms, we ought to make a diagnosis, and then it was best to perform laparotomy.

Stated Meeting, November 18th, 1890.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

DR. PAUL F. MUNDÉ presented a

FIBROID TUMOR OF THE ANTERIOR ABDOMINAL WALL, THE SIZE
OF A DUCK'S EGG,

removed from a woman who sought an operation because of pain. The tumor had been growing for two years, was not movable, and seemed to him not to be intraperitoneal; it extended from the level of the umbilicus nearly to the diaphragm on the left side. It was not his intention to open the peritoneum, but this was torn accidentally while lifting the tumor with a sharp hook. The opening into the peritoneum having thus been made, the operator inserted his fingers, lifted the tumor, and dissected it out, but met with some difficulty owing to adhesions. A very large wound was made, the whole of the rectus muscle above the umbilicus being removed. The peritoneal rent was first closed with catgut. A drainage tube was employed. Considerable sloughing took place in the very fat tissues. The patient made an uneventful recovery. Dr. Thatcher kindly made a microscopical examination of the specimen, and pronounced it to be a fibroma. He thought it had probably formed after some injury. A number of such cases had been reported, yet they are not very common. Out of four hundred and fifty-nine cases of tumors of the abdomen which were operated upon at Olshausen's clinic during the last three years, in only seven was the tumor a fibroid of the anterior abdominal walls.

Dr. Mundé remembered that in several similar cases reported at this Society it had not been decided before operating whether the tumor was intra- or extraperitoneal.

A MALFORMED OVARY, SO-CALLED THIRD OVARY.

DR. MUNDE presented a second specimen, a peculiar malformation of the ovary which is seldom seen. A few weeks before, he had operated upon a woman for a dermoid cyst. After removing the dermoid tumor, he examined the other ovary, and, finding it decidedly enlarged and cystic, removed it. But the point of interest was that the end of the ovary near the fimbriated extremity of the tube was almost separated from the rest of the organ by a constriction, thus almost forming a third ovary. Winckel publishes a photograph of a very similar case. Several cases are on record in which both ovaries were said to have been removed, yet the patients afterward became pregnant, and it was supposed a part of the ovary must have been left behind. The speaker could imagine that might occur in a case of this kind. Out of nearly two hundred laparatomies, he had never before seen what simulated a third ovary.

DR. H. T. HANKS said he had had two cases of fibroid tumor of the abdominal wall. In one case the patient had had the tumor removed by the late Dr. J. B. Hunter, and the pathologist pronounced it a fibro-sarcoma. Another tumor developed, which Dr. Hanks removed with Dr. Lee's assistance. Eight months afterward another tumor developed, also in the abdominal wall a little further down, which he removed at the patient's house. He saw her three years later, and she was then perfectly well.

The other case was that of a woman who entered the Woman's Hospital, having a tumor corresponding closely to the description given by Dr. Mundé of his case. It was sometimes difficult to say whether the tumors were intraperitoneal or extraperitoneal. His second patient also did well after the operation.

DR. FLORIAN KRUG said that two years ago he operated upon a woman, who had passed the menopause, for a large, subserous fibroid of the uterus. At the same operation he removed a fibroid tumor of the abdominal wall the size of a goose egg. He was unable to say before operating whether the tumor was within or without the peritoneum. The woman recovered.

TUBAL PREGNANCY WITH RUPTURED TUBE.

DR. MATTHEW D. MANN, of Buffalo, N. Y., presented three specimens of ruptured tubes from cases of supposed tubal pregnancy. The first was obtained from a case with the following history: A married woman, aged 27, had always menstruated normally. Six weeks before Dr. Mann saw her

she was taken with severe pain and a chill while out shopping. She walked home. The next day she had pain in the ovarian region on the right side. She had been menstruating five days at this time. The pain in the right ovarian region and the flow continued up to her admittance to the hospital. Dr. Mann saw her a few days before she entered the hospital. There was then a mass in the right ovarian region, noticeable above the surface of the abdomen as she lay upon the back. Examination per vaginam showed the mass to be behind the uterus, apparently pretty evenly distributed on both sides; but on bimanual palpation it seemed to lie chiefly on the right side. It seemed to be increasing pretty rapidly, and, although he knew not what it was, he told the patient it ought to be removed. When she entered the hospital she was in pretty good condition, pulse and temperature normal. On opening the abdomen he found a large encysted peritonitis, the sac being composed of omentum and false membrane, containing about half a pint of straw-colored fluid. On breaking into this sac he came upon another, made up of false membrane and portions of the intestine which were agglutinated together. Breaking through the second sac, he found it filled with blood of tarry consistence. After washing this out, and lifting the tube and ovary on the right side where most trouble had been, he found a distinct sac within the tube, which had burst and apparently had been the source of hemorrhage. The other tube and ovary were normal. No drainage tube was used. The patient made a prompt recovery.

EXTRA-UTERINE PREGNANCY; RUPTURE; LAPARATOMY; RECOVERY.

DR. MANN presented a second specimen, consisting of the fetus and placenta removed by laparotomy in a case of ruptured extra-uterine pregnancy. The woman was aged 28; had been married eight years; had had no children, no miscarriages. Her husband had gonorrhea shortly before marriage, and there existed occasionally a gleet discharge afterward. Four weeks before admission to the hospital the patient had very severe cramps in the abdomen, was confined to bed a few days, got up, and was seized with another attack of pain. This time the collapse was so great she was thought to be dying. There was a rapid pulse and increasing temperature. Dr. Mann saw her at this time, but unfortunately did not get the history of the case, and the doctor who called him could not give much information. Finding a mass behind and at one side of the uterus, and knowing then nothing of the sudden attacks of pain, he made a diagnosis of probable pyosalpinx and advised an operation. He heard nothing more of the case for several weeks, until she changed her family phy-

sician, when he was called in again and was told by her physician that her condition was very bad indeed; she had vomited everything for days; her pulse was very weak, the temperature was high, and something must be done quickly. Dr. Mann operated at the hospital next day, and, having still an imperfect history of the case, adhered to his old diagnosis. The temperature was 102° to 103° F., the pulse 160—a not very promising case for operation. On opening the abdomen he found blood on the omentum, the omentum adherent to the brim of the pelvis all around, and, when broken loose, the entire pelvic cavity was found filled with blood, and a large cyst came into view. The blood was taken out by the handful, and in it he found a fetus and placenta, and then was made aware that he had to do with an extra-uterine pregnancy. He tied the sac off, washed out thoroughly, put in a drainage tube, removed it within twenty-four hours, and the patient went on, after a long and tedious convalescence, to recovery. On one day it had seemed as if her condition was hopeless.

SUPPOSED EXTRA-UTERINE PREGNANCY, WITH ABSENCE OF FETUS.

The third case reported by DR. MANN was that of a Russian woman, aged 24; married five years; no children, no abortions. Phthisis had existed a year, the lungs being in bad condition. Menstruation had been regular until seven months before admission, when it became rather irregular, and ceased altogether two months before. The patient had also had several attacks of pain, some of them severe; they came on every day for a week before admission. Some pieces of membrane had passed, and the family physician supposed a miscarriage had taken place. She was taken into the medical service in the hospital, and the house physician telephoned his superior that he had a case of abortion, and received a reply to go ahead and clear out the uterus. He forcibly dilated the cervix, curetted the uterus, removed some shreds, and thought he had left the cavity clean. The patient, however, did not do well, and Dr. Mann was called. He found a large mass on one side of the uterus, which was so tender that he could not examine properly without ether. Under ether he aspirated the mass, but withdrew only a little bloody serum. He made up his mind that he had probably to do with a ruptured tubal pregnancy. The next morning, on opening the abdomen, he found a condition exactly as in the case just related, except that there was no fetus and no placenta. He asked the members whether such cases as this and the first one reported should be regarded as cases of real tubal pregnancy. All had seen cases of hematosalpinx in which the tubes were filled with blood, but he had never seen a case in which but one tube alone was affected

and the other healthy. In this instance, however, the other tube was perfectly normal. Then in hemato-salpinx he could not understand how the tube could be distended in a single portion of its diameter, and rupture there, and not be evenly distended throughout. At the same time, if this were a case of ruptured tubal pregnancy, it was very puzzling to know what had become of the fetus, membranes, villi, and chorion.

Apropos of this case he said he had recently received a letter from a friend, then in Vienna, who stated that lately he had seen Carl Braun operate on two cases of tubal pregnancy, in neither of which he found a fetus or any evidence of placenta or villi. In making the diagnosis Braun accepted what he called Schroeder's view, that all cases of what he spoke of as hemato-salpinx were due to extra-uterine pregnancy, the diagnosis resting, if Dr. Mann mistook not, on the normal condition of the other tube.

DR. G. M. TUTTLE expressed great interest in the cases. Two or three questions had arisen in his mind which had not been discussed by the speaker. The first was whether he was justified in operating in one or two of the cases. From his own experience, which could be considered large only by comparison, he had come to accept certain of Mr. Tait's views on pathology, and, as a consequence, would doubt the propriety of operating in the conditions found in one or two of these cases. In the presence of an indefinitely outlined tumor, with a history which pointed to tubal or ectopic gestation, and uncertainty that blood had escaped into the peritoneal cavity, he thought it was our duty to let the patient alone. Recovery would in almost all cases take place if there were no secondary rupture. There was very rarely, if ever, a well-defined tumor under these latter circumstances. The blood had presumably escaped from a ruptured tube in between the layers of the broad ligament. It seemed to him, from the description given of the second case, that the escaped contents of the tubal sac were under the peritoneum, and according to the experience of Mr. Tait, which was greater than that of any other man, cases of this kind got well if let alone, while they did not always get well when operated upon. The operation was certainly fraught with more danger than when the hemorrhage was intraperitoneal. Thus we had to discriminate between cases in which to operate and those in which the patient should be let alone.

He had recently seen a woman who gave a history of sudden pain, and sudden development of a large tumor which he found filled the right side of the pelvis, producing the characteristic feel in the rectum described by Mr. Tait, pushing the uterus up under the abdominal wall. It was a clear history of ectopic pregnancy, yet, following his theory, he did

not operate; in two weeks the patient had recovered and the tumor rapidly disappeared.

DR. BACHE McE. EMMET said the point on which Dr. Mann had asked the views of the members called to mind a case which he had related at the May meeting as one of tubal pregnancy with escape of the ovum through the uterus, which diagnosis had been called in question by a gentleman from Maryland, and more recently by Mr. Tait, both by letters addressed to the AMERICAN JOURNAL OF OBSTETRICS. Recalling the case briefly, he said it was, in his opinion, positively one of tubal pregnancy, and after applying galvanism the mass had been forced from the tube down toward the uterine cavity and had been expelled entire in that direction. Following it the decidua passed, and he had presented the two specimens to the Society. The view that it was a case of tubal pregnancy seemed to be fully concurred in by nearly all of the members of the Society when he presented the specimen. There had simply been some oozing of blood since the passage of the ovum and decidua, and this continued for five or six days, when a hemorrhage took place. The speaker being out of town that night, Dr. Lusk was sent for. After hearing the story from the family, he made a careful examination, and found toward the fimbriated extremity of the tube on the left side a tumefaction about the size of a goose egg. He introduced a vaginal tampon, and next day Dr. Emmet saw the patient. The tumor was then much smaller, about the size of a pigeon's egg. It gradually disappeared altogether. He felt convinced that it was a hemorrhage into the tube at the site of the original fetal implantation. There had been nothing more than a slight thickening after the passage of the ovum. When he narrated the case, Dr. Dudley asked what was the condition of the tube after the passage of the ovum, and he replied that he had made no examination. By the end of the week, however, he did, and found no thickening, or only very little. But when Dr. Lusk saw the patient after the hemorrhage there was a tumor the size of a goose egg. So he thought in Dr. Mann's case there may have been escape of the fetus down the tube, out through the uterus, and a hematoma formed from bleeding at the site of original implantation.

DR. H. C. COES said, with regard to the pathological point in hemato-salpinx raised by Dr. Mann, that several specimens had been submitted to him as being tubal pregnancy, yet they belonged purely to cases of hemato-salpinx. In hemato-salpinx there must previously have been, he thought, dilatation of the tube from pyo-salpinx or hydro-salpinx, most frequently the latter. There was an important anatomical difference between a tube dilated in consequence of ectopic gestation and one dilated in consequence of a hemato-salpinx. In the latter there

was likely to be general dilatation, while in the former only a portion of the tube was dilated. That point, he thought, would give an important clue to the nature of the case.

DR. MUNDÉ said he had understood that Dr. Tuttle referred to, and accepted, the view of Mr. Tait that, whenever effusion of blood took place between the layers of the broad ligament, it was due to tubal pregnancy.

DR. TUTTLE said he had not made such a statement himself, and it seemed to him absurd.

DR. MUNDÉ added that Mr. Tait had made such a statement, and went on to say how the blood might dissect up the peritoneum, make a large abdominal tumor, and still be extraperitoneal. Dr. Mundé did not accept this view. He thought such cases could just as well be treated by opening the tumor through the vagina, clearing the sac out thoroughly, draining, if necessary packing with iodoform gauze. He had operated upon a dozen cases in which no signs of a fetus were found.

As to diagnosis, it was very easy to make an erroneous one. Only last week he had seen a case of pyo-salpinx which had been mistaken for ruptured tubal pregnancy. The patient lived in Pennsylvania, and he was called to see her by her physician about three months ago. Her doctor had read Mr. Tait's book, and another more recently published, and had a very definite idea of the condition in this case. His theory was that there was a tubal pregnancy which had taken place about four months before, and that rupture had occurred six weeks before, a tumor forming extraperitoneally. Dr. Mundé agreed with him. The tumor was behind and to the right of the uterus, extended up into the right iliac fossa; was doughy to the feel, not movable, increasing in size. The uterus was pushed forward and upward. Accepting the physician's views, Dr. Mundé did not think it necessary to pass a sound. He did not operate. Three months afterward the doctor came to him again, said the woman was undoubtedly pregnant, for he could feel the movements of the child and the fetal parts. He thought it was undoubtedly a tubal pregnancy, the fetus having developed beneath the layers of the broad ligament and worked its way up, and that, as Mr. Tait had said, there was nothing to do but to operate. Dr. Mundé went out again. The next morning after his arrival, having made all preparations for a laparotomy, he examined the woman under ether, and was unable to assure himself that the fetus was outside of the uterus. Undoubtedly, however, there was a fetus. The doctor and the patient's husband would not believe but what the fetus was outside the uterus, so that it was necessary to introduce the sound. It entered up to the umbilicus, a distance of seven inches, showing that the fetus in all proba-

bility was within the uterus. Yet there was the mass behind. It had become firmer, less boggy, less movable; it was apparently a hematoma. The woman aborted a few days afterward. Dr. Mann's case, he thought, was similar, except that there was spontaneous abortion which took place earlier.

DR. H. T. HANKS remarked that it was exceedingly important that physicians should make a very careful examination before operating, for if hemorrhage took place into the peritoneal cavity the patient would die without an operation, while if it was beneath the broad ligament he was confident from experience that she might recover without an operation.

He had seen, within three months past, one case recover without an operation, while a similar one recovered in the Woman's Hospital about a year ago. There was every symptom of rupture of a tubal pregnancy, but the hemorrhage was into the broad ligament, and the woman went out in a few months and has remained comparatively well since. He had also seen one of Dr. Cleveland's cases, in which he had not operated because convinced that the hemorrhage was not into the peritoneal cavity. Another case occurred in a patient of Dr. Mason's, a gynecologist suggesting an operation for tubal pregnancy, yet she got well without. The question of operating depended upon whether the hemorrhage was dangerous, the patient in collapse, likely to die, or whether the hemorrhage was being controlled by the tissues surrounding it.

DR. MANN said, in reply to the question raised by Dr. Tuttle, whether in the first case he ought to have operated, that when the patient came to him he did not expect on opening the abdomen to meet with a tubal pregnancy. He did not make the diagnosis, but operated because there was a rapidly growing pelvic tumor. Although it proved to be an encysted peritonitis, he did not believe the patient would have gotten well if the operation had not been performed. The wall of the intestine constituted a part of the wall of the sac which contained the effused blood, and when lifted was blood-stained, showing that the tumor was not subperitoneal. In the other two cases there could be no question with regard to the propriety of an operation, for they would both have very soon ended fatally without it.

A NEW PLASTIC OPERATION DESIGNED TO STRAIGHTEN THE ANTE-FLEXED UTERUS.¹

DR. E. C. DUDLEY, of Chicago, Ill., read the paper.

DR. WILLIAM M. POLK said he had performed the operation once, about a month ago, and the mechanical results had

¹ See original article, page 142.

been those claimed for it by the reader of the paper. Of course it was too soon to speak of symptomatic results. It was a very easy operation to perform. Before it was done there was the usual difficulty met with in such cases in passing the uterine sound; afterward the sound with the ordinary curve entered readily. In this instance he thought he would test the operation on its own merits, and did not dilate nor curette.

DR. H. C. COE said he had been struck with some of the points of resemblance between Dr. Dudley's operation for antelexion and that performed by Dr. Skene for what he called "imperfect invagination," met with in cases in which the cervix is very short. Dr. Skene makes a transverse incision in the vaginal fornix just in front of the cervix, and converts it into a longitudinal wound by the manner of passing his sutures, the object being to elongate the cervix somewhat, and also to throw it a little back. He thought it was an interesting fact as showing how two minds might work independently in the same channels. Dr. Dudley's, being entirely on the cervix, was, of course, original.

DR. W. GILL WYLIE had listened to the reading of the paper with a great deal of interest. He thought the operation a very ingenious one, and that mechanically it might have some influence. It certainly shortened the canal, and might somewhat change its direction. Still he held to the views which he had expressed six or seven years ago in a paper entitled "Antelexion and its Associated Pathological Conditions." He then stated the belief that the mere fact of flexion had not much to do with the symptoms; that antelexion could not be considered a pathological condition which of itself we should aim to cure. He still held that view. He then advocated divulsion, curetting, and drainage, and he yet believed that by such means we obtained about as good results as by any other. He also then expressed the view that the majority of such cases were cases of imperfect development. During growth the patient's vital forces had been used up in other directions in such degree that the uterus was left wanting and afterwards became the prey of disease. The actual pathological condition might be described as a chronic endometritis resulting from imperfect development. The aim should be to bring about a change in the condition of the mucous membrane. He thought this operation might do something to shorten the canal and change its direction. The author, however, had stated that he also divulsed freely and used the curette; if he did that thoroughly, and did not cure dysmenorrhea in four out of five cases, he did not obtain as good results as the speaker had obtained by that means alone during the past four or five years. If there was failure, it was due to the fact that

the patient's health became reduced again and the local condition returned. The uterus might at the same time be stimulated to development by the use of electricity or other means, and the general health improved or kept up as far as possible.

DR. H. J. BOLDT inquired of the author whether in any of his fourteen cases there was atrophy at the anterior angle of flexion. He asked the question because he thought it was generally admitted that anteflexion of itself did not produce symptoms. Owing to flexion, however, pathological conditions arose, and were likely to disappear, he thought, when such flexion was cured.

So far as divulsion and curetting were concerned, the procedure, in his experience, gave relief for some months, or perhaps a year; but if the dysmenorrhea were due to flexion and stenosis, it would invariably return. This was true no matter how thorough had been the divulsion. The benefit would remain as long as the drainage was kept up, sometimes longer. A permanent result could not be hoped for without restoring the uterus to a physiologically normal position.

DR. H. T. HANKS remarked that those who had, the past ten years, watched the treatment of cases by methods adopted by Dr. Thomas at the Woman's Hospital, could not have failed to notice that many symptoms, often attributed solely to anteflexion, were due really to perimetritis and general metritis. But in those cases in which formerly Dr. Sims' operation had been demanded the method employed by Dr. Dudley would, he thought, be of decided advantage, and it could be performed to-day by hundreds of men as easily as that proposed by Dr. Sims could have been performed ten years ago by a few. It might be easier for the beginner to do Dr. Sims', but there were more able operators to-day than some years ago. By the operation described to-night there was no danger of alarming hemorrhage. But, as he had already suggested, in many cases of anteflexion the symptoms were due to the general condition which had given rise to the malformed uterus. He had temporarily obtained very good results from divulsion and drainage by stem pessary, but they were temporary. His experience had been similar to that of a gentleman who had lately told him that out of fifty letters sent to his patients thus treated, thirty were answered, and in only a very small per cent of this number was there much improvement after wearing the stem pessary for months or a year. If, then, there was any operation which offered better results, he would heartily welcome it.

DR. MUNDÉ said he had taken a great deal of interest in the treatment of anteflexion for many years. He agreed with the other speakers that the symptoms of anteflexion in them-

selves were not very marked. He thought that other conditions, such as chronic endometritis, chronic hyperemia or hyperplasia of the uterus, etc., but chiefly chronic endometritis with the accompanying congestion of the uterus and adnexa, produced the symptoms. The results of his treatment had been better than those mentioned by Dr. Hanks. He had found that forcible and thorough dilatation under an anesthetic, repeated, if necessary, without an anesthetic, in a large proportion of cases cured the dysmenorrhea. Perhaps the cure had been only temporary, but the patients had for months reported that they were well. In the majority of cases he had not found it necessary to repeat the dilatation forcibly under an anesthetic. He thought the result was due, not so much to straightening the ante flexion, as to facilitating drainage and also in overcoming the existing chronic endometritis. He thought also that dysmenorrhea might result from spasmodic contraction of the uterine cervix, just as retention of urine might take place in the male from spasmodic contraction of the urethra, and be overcome by passing a sound.

As far as sterility was concerned—which was the other reason why we operated—he could not say that his success had been so great. He could not speak with so much positiveness on this point, for the patients were less likely to return and tell the result, being usually attended in any subsequent confinement by their family physician. He thought, however, that conception was rather the exception. He thought that it was for the relief of sterility that Dr. Dudley's operation was likely to be most practised. He still did not understand exactly how the uterine canal was straightened by the operation.

DR. A. H. BUCKMASTER, in referring to an illustration made use of in the paper, said he failed to conceive how contraction of the utero-sacral ligament or fold of peritoneum could cause ante flexion, nor could he understand how, when this ligament was congenitally shortened, an operation designed to straighten the lower portion of the cervix could prove of any avail. With regard to the operation described, he could not see that it had any advantages over some of the older ones, excepting that it covered the wound with mucous membrane and prevented septic absorption. He agreed with the other gentlemen in the view expressed some years ago by Dr. Emmet, that ante flexion in itself was not a pathological condition. The plate used by Dr. Dudley for illustration was clearly a case of ante flexion from shortened utero-sacral ligaments, from inflammation; this was evident from the drawing backward and upward of a large uterus.

DR. C. C. LEE said he would be loath to let the evening pass without expressing his gratitude to the author for bringing forward this new operation. He had heard a great deal

about the admirable results of divulsion and drainage, a method which he had practised for years, and, having had the confidence of his patients, he had been able to keep them under observation, and had found it necessary to divulse and curette repeatedly, yet the benefit had always proven only temporary. The cure was never permanent. There could be no question but what he had divulsed and curetted thoroughly. Any operation which could straighten the canal—a thing which divulsion certainly could not do—was a great advance over present methods, especially where it was desired to overcome sterility.

It seemed to him a mere splitting of hairs to talk about the importance of endometritis in these cases as against that of flexure. The fact remained that we could not get rid of the endometritis or other pathological condition until we cured the flexure. Consequently an operation which cured the ante flexion permanently was a great advance.

DR. A. H. GOELET said that inasmuch as electricity had been mentioned, he felt it his duty to say something. A few years ago he might have thought cutting operations on the cervix were necessary, but he had since had experience with a method of treatment which had convinced him that they were not. As had already been said, a pathological condition must exist before flexion could take place. The mechanical rearrangement of the uterus could not alone cure the condition which had brought about the flexion. The author had said that electricity might cure some of the associated conditions. The speaker asserted that it would positively cure the endometritis. He believed, with some others who had spoken, that a great deal of the benefit following the operation of Dr. Dudley came from divulsion and drainage, which partially cured the endometritis. Therefore, Dr. Polk had taken the proper course in allowing the operation to stand on its own merits. But he considered it unnecessary, for the condition attending the flexion could be cured by electricity. He had found it very difficult to completely cure endometritis until he took up the use of electricity, but since that date he had seldom found it necessary to resort to divulsion or support of the uterus.

DR. MALCOLM McLEAN thought, with Dr. Lee, that it was useless to advance the argument that the woman's sufferings came, not from the ante flexion, but from endometritis and associated conditions; the truth remained that these associated conditions were present in ante flexion while they were not commonly present in the normally flexed and located uterus. Further, when the flexion was relieved by some means which also gave drainage, the large majority of the patients, in his experience, were cured of the associated conditions. He had operated upon cases fourteen years ago, and they had remained

cured. He had also on his records a number of cases of sterility cured by operation. Although one of our illustrious men had said the stem was the invention of the devil, yet it had done him good service. Any symptoms which it had produced, causing him anxiety, had lasted only a few hours. It seemed to him Dr. Dudley's operation was going to prove a very valuable addition to our means of treating ante flexion with stenosis. He would first try divulsion and the use of the stem, and, this not succeeding, would operate.

DR. ELIZABETH CUSHIER (present by invitation) said that for a number of years she had treated cases of ante flexion with dysmenorrhea by slight divulsion and intra-uterine applications, and had thereby entirely relieved the vast majority of the cases. In a certain proportion of the cases the dysmenorrhea was relieved by a single application, and it was seldom necessary to make more than three. The application should be made within the first ten days after the menstrual period, and the patient kept in bed from twenty-four hours to three days.

DR. R. B. TALBOT had always used thorough divulsion, curetting, and, if necessary, drainage, and by this means, as stated in a paper read last spring, had had good success in the treatment of sterility and dysmenorrhea due to ante flexion. The patient was placed under ether and dilatation made forcibly. In this connection he exhibited a set of spiral, cylindrical spring stem pessaries having a flange which permitted of their easy removal.

DR. E. C. DUDLEY, in closing the discussion, said there was great danger that this operation would be performed indiscriminately in cases, not of pathological, but of strictly physiological ante flexion. It was possible that those who did not consider ante flexion as having any pathological significance *per se* did not always make the distinction between physiological and pathological ante flexion. Certainly a woman might have ante flexion and have a large variety of lesions wholly independent of the ante flexion; and to say this might, after all, be only saying that a woman might have a variety of pathological developments in the pelvis, and at the same time have the uterus in its normal position. Normal ante flexion could, of course, have no pathological significance.

But since the investigations of Schultze and others we may distinguish downright pathological ante flexion, in one variety of which the uterus is bent to the point of producing two kinds of obstruction at the angle of flexure; 1, obstruction of the canal from collapse of the canal; 2, obstruction of the blood vessels from collapse of the blood vessels. Under such conditions uterine catarrh must follow, as pointed out in the paper, and the normal physiological changes cannot take place

either in the decidua of menstruation or in the decidua of pregnancy; hence menstrual disorders and sterility.

The mechanical indication is clear: Straighten the uterus and thereby relieve the obstruction both in the uterine canal and in the vessels.

He had practised extreme divulsion with curettement in more than one hundred cases, but the results had not been very satisfactory. They had, however, been more gratifying when the plastic operation already described had been added to the dilatation and curettement.

He desired to emphasize the fact that his operation was not a substitute for dilatation and curettement, but rather supplementary to these two procedures, and devised especially to render the straightening of the uterus adequate and permanent. He must, however, admit that he had never performed extreme divulsion without some fear that serious injury might result. With the supplemental plastic operation he now finds it necessary to practise only moderate divulsion. It is wise to practise exploratory curettement in every case, because very often something is thereby removed from the uterus which had not been suspected.

Before the distinction had been made between physiological and pathological antelexion, it was the fashion to treat all antelexions as pathological. The reaction came, and with it a universal proposition that antelexion had no pathological significance *per se*, that it was wholly a question of the associated lesions. But, like universal propositions in general, this one was too sweeping; it did not take into account pathological antelexion.

It is important to remember that some of the associated lesions of antelexion stand in the relation of a mechanical result; the indication is then mechanical. It is hoped that this operation may fulfil that indication.

If antelexion should not be treated mechanically because it is a result of certain associated lesions, then retroflexion and all other displacements should not be treated mechanically, because they also are equally the result of associated lesions. This almost amounts to the *reductio ad absurdum*. Why make antelexion the scapegoat along this line of argument?

As a student and an interne he had been saturated with the idea of inflammation of the utero-sacral ligaments as the great associated lesion in pathological antelexion, but had often been disappointed in his search for evidence of such inflammation. Inflammation often exists there, but in a large proportion of cases in which such inflammation has existed it has all passed away, leaving pathological antelexion as a permanent result.

In reply to the question of Dr. Boldt as to atrophy of the anterior wall at the angle of flexure: On general principles the pressure produced by flexion ought to cause atrophy, but it had not been demonstrable in any of the cases reported.

He had found electricity useful, but not a universal panacea. One should take possession of electro-therapeutics, but should not permit electro-therapeutics to take possession of him.

Stated Meeting, December 2d, 1890.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

MALIGNANT ADENOMA OF THE CORPOREAL ENDOMETRIUM; VAGINAL HYSTERECTOMY; RECOVERY.

DR. H. C. COE showed a typical specimen of adenomatous uterus which he had removed per vaginam from a woman, age 53, three years past the menopause, who was in excellent general health. Symptoms of three years' duration, being an irregular watery, sometimes bloody, discharge, without marked odor. Occasional hemorrhages, but never profuse. Pains in the lower part of the abdomen only during the past few weeks. She was curetted at the Woman's Hospital by Dr. Hanks, who removed a quantity of friable tissue which was thought to be sarcomatous. She improved considerably, but her symptoms returned this fall, and she was referred by Dr. Hanks to Dr. Coe's service at the Cancer Hospital. Dr. Coe removed a specimen from the interior of the uterus, and, after microscopical examination, made a diagnosis of adenoma. Vaginal hysterectomy was performed three weeks ago, the operation being rendered difficult by the small size of the vagina, which hardly admitted a speculum, while the patient was extremely stout. Ovarian arteries tied, lower portions of broad ligaments clamped *en masse*. Convalescence uninterrupted. Patient now sitting up.

The specimen was of more than usual interest pathologically, as only three or four similar ones had been presented to the Society, and but few cases of malignant adenoma were on record.

The case was almost a parallel of the one which the speaker had reported last spring. He believed that the prognosis after removal of the uterus was more favorable in this class of cases than in those of cancer and sarcoma, whether of the cervix or corpus uteri.

MEDULLARY CARCINOMA OF CORPUS UTERI; LAPARO-VAGINAL
HYSTERECTOMY; DEATH FROM SHOCK.

DR. H. C. COE showed the above specimen. The patient, age 53, had never borne children. She reached the menopause at 52, and soon after began to have an irregular bloody discharge, but no pain until within the past few months, when there was also present a watery discharge from the uterus having some odor. General health good. When examined on her entrance into the Cancer Hospital, she presented the appearance of being in robust health. The uterus was as large as the organ at the fourth month of pregnancy, and was fairly movable. The cervix was small, and the os barely admitted a sound. Tents were introduced, and the interior of the uterus was thoroughly explored under ether. The finger was introduced, and a diffuse cauliflower mass was felt involving the corporeal endometrium, but not extending below the os internum. A fragment was removed with the curette and was examined microscopically; sections showed groups of epithelial cells having a well-marked areolar arrangement. There was induration in both broad ligaments, but the uterus could be depressed to a considerable extent. Following the examination the patient had for two or three days considerable pain across the lower part of the abdomen, with a rise of temperature, evidently due to a slight localized peritonitis. Examination at the end of a week showed that the mobility of the uterus was diminished. Laparo-vaginal hysterectomy had been proposed, but the question arose whether it was advisable in view of the recent perimetritis. Dr. Tuttle, who kindly saw the patient, first advised an explorative laparotomy in order to decide as to the exact condition of the pelvic organs, and then to be guided by the intra-abdominal examination as to whether to attempt the removal of the uterus. Unfortunately this suggestion was not adopted, as a subsequent examination under ether by Drs. Tuttle, Cleveland, and himself led them to believe that the uterus was fairly movable and could be removed without unusual difficulty. On the contrary, the operation was the most formidable that he had ever attempted. The cervix was first detached per vaginam and the uterine arteries were clamped. The abdomen was then opened, and the uterus was found to be universally adherent, the intestines being matted to its posterior surface. A double pyo-salpinx was first tied off, after which the broad ligaments were clamped and divided. It was almost impossible to raise the uterus out of the pelvis, so that it was necessary to gain more room by extending the incision above the umbilicus and dividing the recti muscles. With the efficient aid of Dr. Tuttle he succeeded in making an opening through

Douglas' pouch, and separating the attachments of the uterus entirely by feeling. The hemorrhage was profuse, but was quickly controlled with clamps. The vessels were tied, a small wound in the bladder was closed, and the pelvic cavity was irrigated and packed with iodoform gauze, a drainage tube being carried down into the vagina and allowed to protrude from the lower angle of the abdominal wound. The patient had profound shock, from which she did not rally, succumbing three hours later.

The points to be emphasized in the case were:

1. The advisability, in doubtful cases in which it is proposed to perform laparo-vaginal hysterectomy, of first making an explorative incision, since, if the abdomen is opened *after* separating the cervix and securing the uterine arteries, it is then too late to abandon the operation.

2. The occurrence of recent peritonitis as a contra-indication to total extirpation.

3. The coexistence of double pyo-salpinx with malignant disease of the uterus, constituting a formidable and unsuspected complication.

4. The pathological condition. While a sharp differentiation is often impossible, medullary carcinoma of the body of the uterus is less frequent than pure epithelioma, and seems to be more rapid in its course, with a decided tendency to extensive infiltration of the uterine wall and early ulceration, as in this case.

DR. GEORGE M. TUTTLE was glad to avail himself of the opportunity to make a few remarks upon, and emphasize one point in connection with, Dr. Coe's cases. It related to the question of whether, in a given case, it was desirable to perform vaginal hysterectomy, and whether, when the combined operation seemed to commend itself, we were justified, in order to determine the point just raised, in first opening the abdomen and then, if no contra-indications were found, proceeding with the vaginal steps of the operation. This question arose in connection with the case related by Dr. Coe, and, he thought, would continue to arise in all doubtful cases. He thought it would be well, therefore, in doubtful cases to make the opening above first, for we must now and then encounter a case in which it would be impracticable to complete extirpation; it might, perhaps, be done, but would not be justified on account of the great danger of immediate loss of the patient.

THE PRESIDENT inquired of Dr. Coe how far he had proceeded with the operation per vaginam before making abdominal section.

DR. COE replied that he first detached the cervix as high as the anterior and posterior peritoneal folds, without enter-

ing the cavity, and clamped and divided about half of the broad ligaments; but he found it impossible to draw the large uterus down, and on opening the abdomen it appeared that he had liberated the organ to scarcely an appreciable extent.

THE PRESIDENT said he had been led to ask the question from experience which he had had with a case at the Skin and Cancer Hospital a year ago. The woman was 62 years of age; the disease proved to be sarcoma of the uterus, which latter seemed to be about the size of one's fist. The patient had never been married, and the vagina was extremely small. He did not believe it possible to remove the uterus by way of the vagina, at any rate not easily, and that fact was taken into consideration when he decided to pursue the course which Dr. Tuttle had suggested this evening. He therefore opened the abdomen, cut down upon the broad ligaments, clamped them from above, then made dissection from below through the vagina, and finally removed the uterus through the abdominal wound, experiencing little difficulty. He pursued this course because of the size of the uterus, not because there were any extensive adhesions, for there were not. The remarks of Dr. Tuttle, of course, were based on the existence of strong adhesions and immobility of the uterus. He thought his remarks were very appropriate in such cases. It seemed to him that the uterus presented by Dr. Coe was a very large one to take out by way of the vagina, even if there had been no serious adhesions and the uterus had been quite movable.

SUBMUCOUS FIBROID SIMULATING PREGNANCY.

DR. G. M. TUTTLE presented a number of specimens with brief histories. The first was a large submucous fibroid, the case being the only one in which he had himself found it difficult to distinguish between pregnancy and a fibroid tumor. He thought he had probably been more sceptical than he justly should have been regarding the difficulties ordinarily encountered in diagnosis in such cases.

The patient was a colored woman, between 30 and 40 years of age, a widow for twelve years, who did not admit having had intercourse the past few years. She had noticed a lump in the groin about four years ago. During the past four years the lump had steadily increased in size, its growth having been accompanied by repeated attacks of acute pelvic pain, with high fever, tympanites, and the expressions of attacks of peritonitis. She had had very little bleeding to within fourteen days of admission. She said she then began to flow heavily. She had been treated by electricity for several months, but this agent had caused no subsidence in the tumor,

as far as could be learned. She had also had subcutaneous injections of ergot, but had received no substantial relief. Following the use of electricity on two occasions she had attacks of peritonitis.

Dr. Tuttle found the uterus quite symmetrical, reaching to within about two inches of the umbilicus. It was soft, giving the impression of fluctuation. The tumor could not be examined from below. The cervix was elongated, slightly softened, but did not convey to his finger evidences of pregnancy. The absolute symmetry of the uterus and the sense of fluctuation led several physicians who saw the patient to lean strongly to the diagnosis of pregnancy. On very careful bimanual examination Dr. Tuttle found evidences of decided disease of the appendages on both sides. They were bound down in large masses at the sides and behind the uterus. For these reasons he pronounced positively against a diagnosis of pregnancy, and proceeded to do laparotomy. But on opening the abdomen his courage almost failed him, for the tumor presented the appearance of the pregnant uterus; the color was good, it was soft, and it seemed he could get an obscure sense of ballottement. However, on pulling the uterus forward and examining its attachments, he found the appendages at the sides profoundly diseased, adhesions very general. With double pyo-salpinx there was also enlargement of the ovaries, and he made up his mind that it was a case of fibroid, possibly accompanied by pregnancy. Knowing the vitality of the embryo must have been sacrificed, if there were one, and that the condition of the appendages also justified their removal, he decided to take out the entire tumor. In this case he had his first experience in the use of a rubber tube thrown around the pedicle. The patient made a good recovery.

OPERATION FOR RUPTURED TUBAL PREGNANCY.

The second specimen was obtained from a case operated upon for ruptured tubal pregnancy, it being the ninth in his experience, and the only fatal one. He had operated, however, under almost hopeless conditions. The woman was in her fortieth year; had had a number of intentional miscarriages; had recently been married a second time; had menstruated regularly up to a certain day in September last. One month from that day she had a slight show which lasted fifteen minutes. Soon after that there was an attack of acute pelvic pain, with pallor and faintness. She was seen by a physician, and subsequently three consultations were held, but ectopic pregnancy was not recognized. A short time afterward she had a second attack, and after another interval a third one, when Dr. Tuttle saw her for the first time. The

third attack was marked by complete loss of consciousness, great pallor, pain, the pain continuing, together with tympanites. When he was called, the pulse could not be felt at the wrist; the belly was enormously distended; the patient was apathetic, could not be aroused, and seemed to be dying. In spite of these facts, however, he thought it justifiable to attempt to save her life, and, with the entire approval of her friends, she was conveyed by ambulance to the hospital and the abdomen was opened. A large quantity of dark blood clots escaped, and the woman died. The fetus and placenta were found in the abdominal cavity.

PAPILLOMATA OF THE OVARY.

Dr. Tuttle remarked, on presenting his third specimen, that it was one which was fraught with a great deal of interest. It was obtained in the case of a woman who was the wife of a physician. She was 25 years of age; had been married about a year; had been in excellent physical condition until within the last three years, when she began to suffer from painful menstruation. About a year ago, and shortly before her marriage, menstruation became very painful, constituting an extreme type of dysmenorrhea. This lasted two or three periods, then menstruation took place without so much pain. Following marriage, however, it again became very painful, and a peculiarity in the case was that about the tenth day after cessation of the flow there was a recurrence of terrible pelvic pain; it was so great that when he first went to see her he was able to hear her screams at a distance from the dwelling. Her husband kept her almost constantly under chloroform and other narcotics for many hours. On making examination Dr. Tuttle found the left ovary prolapsed, much enlarged, very hard and nodular. The inference seemed to be clear that the ovary was in a fibrous condition, and that the pains during the menstrual period coincided with the attempted dehiscence of the ovum with hemorrhages into the Graafian follicle; that these subsided with the relief of menstrual congestion, and were renewed with intermenstrual maturation and attempted dehiscence of ovules, the escape of the latter being prevented by the dense new fibrous tissue in the ovary.

The operation disclosed an exquisite example of papillary ovary. The ovarian tissue had been almost entirely replaced by connective tissue. There were a number of cysts and some large clots. The right ovary was the most beautiful example which he had ever seen of beginning papillomatous change. It was studded with what looked like grains of sand. He therefore removed both organs. There was slight ascites,

but no other evidence of inflammation extending to the peritoneum.

HIGH AMPUTATION CONVERTED INTO HYSTERECTOMY.

The last specimen presented by Dr. Tuttle consisted of the uterus and appendages which he removed after accidentally penetrating the peritoneum when trying to amputate the infiltrated cervix by Baker's method. After penetrating the peritoneum through the very rotten tissues, he thought it best to go on and do hysterectomy and obtain thorough drainage. He also removed as many of the nodular masses from the vicinity of the bladder as it was possible to do. The patient had not yet had recurrence, although it was likely to take place early.

DR. COE remarked, in connection with the first specimen presented by Dr. Tuttle, that cysts lying anterior to the uterus also gave the impression sometimes of a pregnant uterus. He recalled a case of fibro-cyst of the uterus which so strongly resembled pregnancy that the diagnosis could not be made until the tumor had been lifted out of the cavity and tapped. Last week he assisted a friend in removing an ovarian cyst which lay in the anterior fornix in such a way as to simulate the fundus of a gravid uterus.

The specimen of ovarian papilloma was interesting, for few specimens had been presented to the Society. He had seen only two or three at the Woman's Hospital. A very interesting point, aside from the comparative rarity of the disease, was the fact that ascites was an almost constant accompaniment, and pointed clearly to a malignant element. The cause of the ascites was not clear. It seemed to be due to some irritation of the peritoneum by the presence of the tumor, even when there were no secondary deposits on the former, and bore no relation to the size of the growth.

He had had an experience similar to Dr. Tuttle's, in being led to perform hysterectomy when he had not intended to do a radical operation. On one occasion, when attempting high amputation before he was familiar with the procedure, such profuse hemorrhage occurred that he was led to perform hysterectomy. In another case he accidentally opened into the peritoneal cavity, and, as a loop of intestine came down, he felt safer to go on and remove the entire uterus. In a third case of high amputation, performed about six weeks ago, he entered the peritoneal cavity, but did not remove the entire organ, and the patient had no trouble whatever. He therefore thought, in view of this experience, that in another case, unless the opening into the peritoneal cavity was a very large one, he would not hesitate to leave the remainder of the uterus after doing high amputation.

NEPHROTOMY FOR CALCULUS.

THE PRESIDENT presented a calculus removed from the kidney by nephrotomy. The patient was a woman of 43 years, who came under his care last May, when he recognized pretty extensive disease of the left tube and some of the right. She was also suffering from cystitis to a marked degree; and as it was late in the season he directed his attention to this affection chiefly. He made a vesico-vaginal fistula and gave general treatment. There was also considerable pain across the back, but which he was disposed to think at that time was due to the tubal disease. After a time she went to the country, and on returning, about the middle of October, was seen again by the speaker. After watching her a few days he became convinced there was also some serious trouble with the kidney. During the summer the pain had become intensified in the region of the left kidney. There was at the same time considerable pain in the region of the other kidney, which is not at all uncommon when but one organ is affected. The following further facts led him to the conclusion that there was probably a stone in the pelvis of the left kidney: An attack of renal colic in January last; extreme acidity of the urine, which was pretty well loaded with phosphates; a large amount of muco-purulent discharge, notwithstanding there had been marked relief of the cystitis during the summer.

He gave the patient ether one day, and passed a catheter through the fistulous opening in the bladder up into the left ureter, and withdrew about two drachms of urine directly from the kidney before it could reach the bladder and become mingled with the urine from the other kidney. The pathologist who examined the urine for him assured him that probably most of the muco-pus and other abnormal constituents had come from the left kidney. Being convinced that there was an impacted renal calculus, he admitted the patient to his private hospital and performed nephrotomy, making a lumbar incision, opening into the pelvis of the kidney, and removing without much difficulty the calculus then being passed around. It was composed almost entirely of phosphates, and had broken down somewhat during extraction with the forceps. There was very little hemorrhage. A small glass tube and a small double rubber tube were left in for drainage, the incision being closed with silk sutures. The glass tube had been removed last Thursday, the operation having been performed one week ago. The patient had done perfectly well. A very small amount of pus came with the urine through the rubber tube. As soon as the patient fully recovered from this operation he would close the vesico-vaginal fistula. The

cystitis had been secondary to the kidney trouble, and at present date seemed to be perfectly cured.

DR. COE remarked that the introduction of a catheter or sound into the ureter in such cases was a valuable aid in making a diagnosis. Had it been resorted to in one instance of nephrectomy for suspected renal calculus, performed by a prominent specialist in this city, in which the kidney was found normal, the calculus would have been discovered impacted in the ureter an inch from the bladder, and an autopsy might have been spared.

THE PRESIDENT said that, if he remembered correctly, Thompson had reported a case in which he found the stone in the ureter about an inch from the bladder, after having opened the abdomen.

DR. H. C. COE then read the paper of the evening :

A FATAL CASE OF CONCEALED ACCIDENTAL HEMORRHAGE
DURING LABOR.¹

The author expressed the desire that the discussion be directed particularly to diagnosis and to treatment.

DR. W. M. POLK, speaking first of diagnosis, said it would appear that in all the cases yet reported in which the cause was not known to be traumatism or some existing disease, the conditions attending their development were similar to those existing in Dr. Coe's case. Of course the hemorrhage might be due to a fall or a blow, but in that case the history of the accident would be given. In renal disease, exanthematous affections, and continued fevers, patients were more prone to the development of accidental hemorrhage. All these conditions were excluded in Dr. Coe's case, which placed it in the list of those in which there was no recognizable predisposing cause.

He must confess that, in common with most observers, he was at a loss to say just what were the symptoms which should arouse our suspicion of concealed hemorrhage, beyond those mentioned by Dr. Coe, namely, the want of symmetry in a uterus which previously had been symmetrical. It was taken for granted that physicians always examined the uterus when they first saw their patients, and, therefore, were able to appreciate any irregularity in outline which might afterward take place. This irregularity of shape was unquestionably most important evidence of the condition after the hemorrhage had assumed some proportions.

He did not know that it was possible for us, with our pre-

¹ See original article, page 152.

sent knowledge, to detect the commencement of hemorrhage with a normally situated placenta, or one implanted above the central line of the uterus. If there was any symptom of the condition, it would seem to consist in irregular, cramp-like uterine pains. In this regard there was a certain analogy between the condition of concealed hemorrhage and rupture of the uterus. In both conditions there was undue distention or undue pressure upon the organ at some one point. When that occurred there was always some interference with regularity in the pains.

Having, therefore, a case in which at our first examination the uterus was symmetrical, in which the pains occurred with reasonable regularity, characteristic of a slow labor; then finding in such a case that the pains had become irregular, sharp, unusually painful, especially if referred to the upper and anterior portions of the uterus rather than to the back; the uterus assuming an irregular outline; the pulse showing unusual disturbance—under these circumstances he thought we had about as strong evidence of concealed hemorrhage as our present knowledge would enable us to make out. But he was careful not to say that even such symptoms were unmistakable evidence of hemorrhage. They would at least show that an unusual state of things existed, and would place the obstetrician upon his guard. Careful observation would enable him to detect the enlargement when it came later, and better prepare him to take such steps as might be necessary to save the patient.

But in many cases the hemorrhage was concealed until the child was actually delivered. It might be encapsulated in the margin of a large placenta. Therefore one could not rely upon the late appearance of blood as confirmatory of his diagnosis; but if it occurred, it removed all doubt.

It was to be understood that he had in mind only those cases in which all predisposing causes had been ruled out. Still, he had not understood Dr. Coe to say positively that there was no evidence of syphilis in his case.

Dr. Coe said his statement that the history was perfect meant also that there was no history of syphilis.

Dr. Polk added that calcareous degeneration of the placenta in this class of cases was not uncommon, and when it was present there was no more reason why hemorrhage should not arise than when there was placental degeneration from other diseases, as nephritis.

In discussing treatment, he took it that it was best to confine remarks to the class of cases which Dr. Coe's fell in. There were undoubtedly cases of accidental concealed hemorrhage in which some waiting seemed to be indicated. He had in mind a case in which a patient had such hemorrhage,

resulting from a kick upon the abdomen. There was sudden, great hemorrhage, and the patient when seen was in collapse. There was, of course, no dilatation of the cervix, labor having hardly commenced. In fact, the shock had been so great that the uterus was almost paralyzed. Rapid delivery under those circumstances would have meant the further shock incident to forcible dilatation of the cervix and forced extraction of the child by version, and could not have but rendered the chances less favorable.

In Dr. Coe's case it was stated that when hemorrhage was suspected the cervix was about half-dilated. It was large enough then to fully justify the procedure which had been undertaken. If in such cases there was not sufficient dilatation, and it could be accomplished without materially adding to the shock, Dr. Polk thought it was the first step which should be taken after having stimulated the patient properly and taken the usual hemostatic precautions. Having dilated the cervix, one should rupture the bag of waters and perform version. Usually one could perform version by the external method without any great amount of disturbance to the patient; but if it could not be effected in that way, then resort to the internal method. In other words, the indication was to empty the uterus as quickly as possible, in order to secure that contraction which was essential to stopping the hemorrhage. He believed the weight of opinion favored that procedure rather than delay in the class of cases now under consideration.

He would venture to make some remarks on the after-treatment, which, however, would not apply to Dr. Coe's case, because he had no tampons.

The view which he was about to express was rather contrary, he said, to those generally held. Remembering, however, that the uterus, after being emptied, still failed to contract and control the hemorrhage, he did not know why one should not, in violation of the ordinary rule, put in iodoform gauze and tampon the uterine cavity.

DR. I. H. HANCE inquired of Dr. Coe whether the cord was found absolutely short, or relatively short owing to being twisted around the neck.

DR. COE replied that the cord was not wound around the child's neck, and he believed it was of about normal length.

DR. HANCE said that, in listening to the history of the case, which seemed to be one of sudden shock and signs of concealed hemorrhage, the question had arisen in his mind whether the condition might not have been one of two things: first, a slight hemorrhage behind the placenta; secondly, an absolutely short or relatively short cord which had interfered with expulsion of the child.

The symptoms were very similar to those present in a case in which he was able to show, after the child's birth, that they were due to an absolutely short cord. Besides in itself being able to give rise to the symptoms present in Dr. Coe's case, such shortness of the cord might also lead to concealed hemorrhage. In his own case the history, up to the time when Dr. Coe was sent for to see it as a case of hemorrhage, was precisely the same as in the case narrated in the paper. In addition to the symptoms therein mentioned, it was to be noted that the head would recede with each relaxation of the uterus, leaving only a small segment projecting into the pelvis. Even after he had applied the forceps and made traction, the head would recede each time he relaxed his efforts. With extraction of the head there was profuse hemorrhage, which was renewed with the passage of the body. The placenta was then extracted at once. The cord measured only nine inches in length, and to this he attributed the irregular contractions of the uterus and the prolonged first stage. In the absence of any other apparent cause for the symptoms of hemorrhage, he would expect to find a short cord which had been making traction upon the uterine muscular tissue with each labor pain.

DR. R. A. MURRAY said he had not been present in time to hear the reading of the paper, but, having known of the case which the author reported, he expressed the opinion that, in the absence of any other apparent cause, the symptoms were due to detachment of the placenta before delivery. He had seen the placenta detached before delivery of the child, the pains commencing at the cervix and extending to the fundus, so that later, when the child was expelled, the placenta followed immediately.

He had once seen a case of accidental hemorrhage of alarming proportions in which the symptomatology was different from that in Dr. Coe's case. Following a very severe pain there were sudden collapse and immense distention of the uterus, leaving the patient in almost a moribund condition. This condition having followed a severe pain, he thought at first of rupture of the uterus; but since no part of the child could be felt to extrude, this opinion could not be verified. On emptying the uterus there was found to be a large effusion of blood behind the placenta. He had, however, seen few cases of accidental hemorrhage which were not due to some injury.

He related a case of hemorrhage due to traumatism in which there was also placenta previa. When walking in a dark room the patient struck her abdomen on the sharp corner of a sewing machine, which resulted in killing the child, causing concealed hemorrhage, and bringing on labor. Not hav-

ing seen the patient before, and finding placenta previa, Dr. Murray inferred that hemorrhage had been due to this condition. He turned the child and extracted, and then removed a large basinful of clots. The child was found to have a mark on the temple, due to the blow, and death was supposed to have been due partly to the trauma and partly to the hemorrhage. There had been no hemorrhage previous to the accident.

As to the symptoms, he thought that in a number of cases the pains were irregular and gave us an impression that something unusual was going to happen. Occasionally, however, the hemorrhage came on with alarming rapidity, the collapse was extreme, and raised the question most impressively of what to do. If one were to empty the uterus he would certainly add to the shock. He would have to be guided, he thought, by the condition of the cervix. If this were found dilated sufficiently to permit of version, he thought this should be performed. If the cervix were not found dilated, labor should be instituted and Barnes' dilator employed. At any rate, he thought it was safest to rupture the membranes, which would relieve tension and allow the uterus to contract. In the distended state the uterus could not contract without something giving way—that was to say, without rupture. He thought the greatest danger came from shock, whether caused by the physician in instituting artificial labor or by nature's efforts. Each case must be a law unto itself in treatment.

As incidentally bearing on the discussion, Dr. Murray said he had been impressed with the frequency of post-partum hemorrhage following operative interference, and he thought it was due to the fact that the uterus was emptied too rapidly.

DR. BUCKMASTER said the question of tamponing the uterus for the arrest of hemorrhage in cases of this class had attracted a good deal of attention recently. He thought it not necessary to forego this practice, if desirable, for want of iodoform gauze; one could use a clean pocket-handkerchief torn into strips, etc. Inasmuch as the uterus had been emptied after sudden over-distention, it seemed to him only rational to tampon, provided other means for inducing contraction had failed. If necessary, the handkerchief or other clean linen could be further sterilized in a few minutes by placing in boiling water. He did not think anybody could be blamed in such cases for not making a diagnosis until after things had reached a pretty serious condition. He thought dilatation of the cervix one of the most important steps, when the condition is diagnosed early. If the head had engaged he would rather deliver by forceps than try version, as Dr. Coe suggested.

DR. G. M. TUTTLE had, when a student in Prague, seen two cases of concealed hemorrhage in the hospital under

Breisky, and had been strongly impressed with the latter's diagnostic ability based on palpation. Breisky diagnosed the condition in both of these cases before delivery of the woman. One was a traumatic case; in the other he did not recall the origin. The cervix was dilated in each instance, the bag of waters was ruptured, and Breisky performed version and extracted the child, in both cases saving the life of the mother. Before delivery, Breisky pointed out, in his usual masterly way, the disappearance of the outlines of the child, and other facts pointing to probable internal hemorrhage. It seemed to Dr. Tuttle that weight should be laid on the disappearance of the outlines of the child, and, with this evidence added to that mentioned in the paper, he would feel impelled to take very energetic action. He could conceive of signs of such severe internal hemorrhage going on that one would be justified in removing the entire uterus—a course which had been recognized as the safest in certain cases of rupture of that organ. He wished to say, however, that this must be a rare indication. It would apply only where there was no cervical dilatation, no engagement of the head, with, perhaps, a history of traumatism and severe accidental hemorrhage, with imminent danger to life.

DR. C. T. ADAMS said that in cases of the kind under discussion, in which it was desirable to deliver quickly, he thought one might properly resort to the method recently recommended by Dr. Dührssen, of Berlin. It consisted in making several incisions into the cervix and proceeding to deliver at once. If the uterus were atonic, he did not think Barnes' dilators would act efficiently.

DR. W. E. BULLARD thought that where there were a normal head and normal pelvis, and especially if the head had already become engaged in the pelvis, as was true in Dr. Coe's case, it would be better to deliver with the forceps than to perform version. He had had some experience in placenta previa—cases in which it was usual to turn and deliver in order to stop hemorrhage—yet he had found it possible to apply the forceps and deliver so quickly that he pursued that course.

DR. POLK remarked that when he spoke of version he had in mind the question of treatment in general, and not a particular case, like Dr. Coe's. He believed it was well recognized that where the cervix was dilated sufficiently to enable one to apply the forceps, that means of delivery should be resorted to. It was where the cervix was not sufficiently dilated to admit of the introduction of forceps that version was resorted to.

DR. W. GILL WYLIE said he had never had a case of concealed hemorrhage coming under the category under discussion, but he thought it would be unwise to wait for the

patient to get in better condition before operating. He had seen some pretty desperate cases of hemorrhage from splitting of the cervix during forceps delivery, and from other causes not just of the nature discussed in the paper, and, judging from that experience, he would infer that the uterus had better be emptied at once in cases such as those discussed by Dr. Coe. One should not adopt the old method of waiting, inasmuch as this, he thought, had been the cause of death in many cases of internal hemorrhage, as in extra-uterine pregnancy, etc. Do not wait in order to improve the patient's condition by stimulants, but give stimulants while operating.

DR. MURRAY thought Dr. Wylie's criticisms could not be considered applicable to his own remarks, for he had limited them to certain conditions which were different from those had in view by Dr. Wylie. He had in mind cases of concealed hemorrhage in which the cervix was not dilated, and in which there was a great deal of shock. In such a case he still thought it expedient to first try to restore the patient. In extra-uterine pregnancy the circumstances were different, for there hemorrhage was taking place into a cavity which was capable of extreme dilatation, and might lead to death from loss of blood. In the pregnant uterus, dilatation and consequently hemorrhage could take place only to a certain point. By pressure one might still further limit the dilatation. He accepted Dr. Wylie's recommendation as applied to extra-uterine pregnancy and rupture of the uterus, but did not think it always applicable in cases of concealed hemorrhage within the uterus.

DR. COE, in closing the discussion, said that he had hoped that the members might throw some light on the cause of death in these cases. It did not seem to be always from loss of blood; in fact, some patients who had died had lost very little blood—his own, perhaps twenty or thirty ounces, which certainly was exceeded in some abdominal operations without a fatal result. As Dr. Goodell had said, there seemed to be something in the sudden and excessive distention of the uterus which produced a profound nervous shock.

Neither Dr. Grandin nor himself had thought, after extracting the child, that there was imminent danger of losing the patient. Her pulse was not excessively weak after delivery, the uterus contracted well at first; in fact, her condition was so favorable that Dr. Coe proceeded to sew up the perineum. The uterus, however, relaxed again, and moderate post-partum hemorrhage took place. He regretted afterward that he had not had some iodoform gauze with him, for, with Dr. Polk, he firmly believed that it was advisable to tampon in these cases. He never went to a case now without it. But, aside from hemorrhage, there was this element of shock, and

that was what made these cases so uniformly hopeless. On looking over the histories collected by Dr. Goodell, it was to be seen that even in the hospital cases, in which the indications were met early, in which version was performed and the child was promptly extracted, and when there had not been much blood lost, the patient died. Out of 106 cases nearly 50 per cent of the mothers died, while all the children perished excepting 6; and yet many of these were more favorable than the one narrated by the speaker. In private practice the conditions were much less favorable for an early diagnosis and for the prompt adoption of the best methods of treatment. But, having made the diagnosis, should we go ahead and perform *accouchement forcé* and run the risk of rupturing the uterus, or delay and let the patient die undelivered while waiting for the os to dilate, even when Barnes' bags are used? Should we deliver by version or by the forceps? Those questions had to be solved, often on the spur of the moment. In his own case he did not feel justified in proceeding without counsel, and the event proved that it was fortunate that he did not do so; for, although he lost about half an hour in waiting for assistance, yet he probably would have lost his patient during, or immediately after, delivery if he had not had skilled assistance. It was his first case of the kind, and he hoped that he might never see another.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, November 5th, 1890.

A. L. GALABIN, M.D., F.R.C.P., *President, in the Chair.*

Specimens.—MR. BLAND SUTTON: Fleshy Mole in the Fallopian Tube.

DR. W. DUNCAN: (1) Suppurating Dermoid Cyst; (2) Ovary and Tube with Papilloma. DR. A. ROUTH: Acephalous, Acardiac Fetus.

DR. HERMAN read a paper on

FOUR CASES OF PREGNANCY WITH BRIGHT'S DISEASE.

The author points out that to understand the relation between renal disease in pregnant women and eclampsia of

pregnancy, it is necessary to compare cases of renal disease with eclampsia with cases of renal disease without eclampsia. Four cases of the latter kind are detailed in this paper, of which the chief features are as follows :

CASE I.—Second pregnancy. Morning sickness ceasing about middle of third month; vomiting returning in seventh month, together with edema, giddiness, amblyopia, and disturbed sleep; slight anemia; no marked cardiac hypertrophy; urine solid with albumin; quantity of urine increased; excretion of urea slightly below the average; induction of labor near end of seventh month; child living; rapid diminution of albuminuria and increase of urea excretion following delivery; recovery; subsequent pregnancy without similar renal changes.

CASE II.—Sixth pregnancy. Twins; hydramnios; edema in last four months of pregnancy; no other symptoms; urine solid with albumin, about half paraglobulin; slightly diminished quantity of urine and urea; labor accelerated by separation of membranes around os uteri; children living; delivery immediately followed by great diminution in albuminuria, great diuresis, and augmented urea elimination; temporary return of albuminuria during latter part of lying-in period; apparently complete recovery.

CASE III.—Sixteenth pregnancy. Fits after confinement six years previously; symptoms coming on at beginning of eighth month of present pregnancy; intra-uterine death of fetus; premature labor induced at end of eighth month, after one week's treatment by rest and milk diet; no diminution in quantity of urine, but diminished urea elimination; albuminuria; diminution of albuminuria and partial restoration of urea excretion before delivery, continuing after delivery; recovery, but persistence of renal disease.

CASE IV.—Albuminuria; uremic twitchings; cerebral hemorrhage; induction of labor at beginning of eighth month; child living; diminished percentage of urea before delivery; after delivery rapid increase in percentage of urea, and temporary diminution of albuminuria; renewed cerebral hemorrhage; coma; death; no autopsy.

The author comments on the special features of each case: the diminished albuminuria and increased urea excretion which followed delivery in all; these effects of delivery being greatest in Case II., in which the abdominal distention was greatest, and least in Case III., in which the abdominal enlargement was least; Case III. being also contrasted with others as to the amount of albumin and the duration and persistence of the disease.

DR. LEITH NAPIER said that during gestation there was a specially unstable condition of the epithelial tissue in all the

large glands, and, as might be expected, the kidneys frequently suffered. Twenty-five years ago Seypert, of Prague, showed that of 70 patients suffering from kidney disease during gestation, only 2 developed eclampsia. A more recent series of 152 cases in which autopsies were made on puerperal and pregnant women who were found to have Bright's disease, showed that only 6.6 per cent had eclampsia symptoms. Bamberger in this series included chronic and atrophic renal disease. Braun estimated that 60 per cent of women suffering from acute and chronic Bright's disease developed convulsions. He (Dr. Napier) alluded to a case of scarlatinal nephritis in which pregnancy went on normally. He asked what was the normal amount of urea excreted during pregnancy. He believed it was less than usual, and that it was increased after parturition. He believed that all cases of albuminuria, whatever the cause, were relieved after parturition.

The existence of acetouria in relation to eclampsia was important.

DR. ROUTH took exception to these cases being called Bright's disease, because they were cases of albuminuria. He did not think that the term Bright's disease should be used unless there were *casts* in the urine, and unless, by the use of the ophthalmoscope, evidences of neuritis and local congestion were found.

DR. HAYES thought premature labor should be brought on.

DR. HORROCKS asked whether Dr. Herman had found sufficient differences in the quantities of urea and albumin between the present series of cases and his former series of eclampsia to point to a causal relationship. He thought that the nervous system played an important rôle in puerperal eclampsia, and pointed out that in only one of the four cases was the patient single, and she was a secundipara.

MR. ALBAN DORAN observed that there appeared to be three diseases clinically distinct: (1) Albuminuria associated with ovarian and other abdominal tumors; (2) The albuminuria of pregnancy; (3) True Bright's disease complicating abdominal tumor or pregnancy. In the first the albuminuria always disappeared after successful removal of the tumor, and fits never occurred. The second class of cases was often associated with eclampsia. In the third form the patient was all the better for removal of the tumor or for delivery.

DR. HERMAN, in reply, said he had used the term Bright's disease in its comprehensive sense. Many looked upon puerperal eclampsia as nothing else than uremic convulsions occurring as the result of kidney disease in pregnancy and child-bed. There was very little evidence either for or against this view, which was mainly based on inferences drawn from our knowledge of renal disease apart from pregnancy. He did

not think that in these four cases the albuminuria was a simple result of pressure. He had made no investigations into acetoneuria in pregnancy. In vol. xxix. of the *Obstetrical Transactions* he had published all the observations that he could find recorded on the normal urea excretion during pregnancy and the lying-in; and the results were so contradictory that it could not be said that we had any definite knowledge about it.

ON PLUGGING THE UTERUS IN SEVERE CASES OF POST-PARTUM HEMORRHAGE, WITH NOTES OF A SUCCESSFUL CASE.

DR. LEWERS read a paper on this subject. He referred to Dr. Auvard's monograph on "*Tampouement Intra-Utérine*," and reviewed the history of this treatment. Out of 17 cases, 3 died, from eclampsia, tuberculosis, and septicemia respectively.

Case.—Mrs. M., 25 years of age, miscarried at the fourth month of gestation. It was supposed that a piece of placenta was left behind, but she was so nervous that a proper examination could not be made. The next day she had a rigor and there was an offensive discharge. Thirty-six hours after the miscarriage an anesthetic was given and a putrid mass removed from the uterus, to the upper part of which it was attached. The curette was then used, when sudden and alarming hemorrhage took place. Hot-water irrigation was employed with some iodine in it. This failed, and the uterine cavity was plugged with dry carbolic gauze, carried up to the fundus with the ovum forceps, and packed by the curette. Both uterus and vagina were tightly packed, and a T-bandage was firmly applied. The bleeding was thus arrested. The gauze was left in for twenty-one hours, and on its removal the uterine cavity was washed out with iodine water, and antiseptic vaginal douches were used for some days longer. The hemorrhage did not recur, and the patient made a good recovery.

In addition to a vulsellæ to hold the uterus during plugging, and the forceps and curette already mentioned, a Smith's modification of Sims' speculum was useful. If about to plug the uterus and vagina in post-partum hemorrhage at the full term of gestation, an ample supply, say forty-six yards, of dry carbolic gauze should be provided. It was stouter than iodoform gauze, and so less was required. He (Dr. Lewers) thought that plugging the uterus and vagina was an effectual treatment for many cases that would otherwise prove fatal.

DR. PRIESTLEY thought the older obstetricians would look with horror upon the method of treating post-partum hemorrhage by plugging. He thought there were radical objections to it as a general method of treatment. The case given was

not a case in point, as the patient was only four months pregnant, the uterus but little developed, and plugging even of the vagina might have been quite a legitimate method, because there was no large and expansible uterine cavity above it for the accumulation of blood. To plug the uterine cavity at full term would be no easy matter, and would require a large amount of material. Moreover, it thwarted the physiological process of preventing hemorrhage after delivery, namely, by the muscular fibres of the uterus which constricted the open mouths of the vessels at the placental site. Any tampon, large or small, would prevent this mechanism coming into play; and even if it stopped hemorrhage for a time, its removal might be followed by further loss. He hoped the method of treatment would not receive the sanction of the Obstetrical Society.

DR. PLAYFAIR said he had no practical experience of this method of dealing with post-partum hemorrhage. It was an old-established axiom in midwifery practice that the plug was never applicable so long as there was any possibility of the uterus dilating behind it. A newly emptied uterus might very well contain a fatal amount of hemorrhage if only its lower segments were filled with the plug, and much care would be required to prevent the possibility of this occurrence. In Dr. Lewers' case, and also in cases of secondary post-partum hemorrhage, plugging might be useful. He should consider it no easy matter to pack a large, flaccid uterus immediately after delivery. He thought it would be intolerable for accoucheurs to carry forty-six yards of gauze about, the equivalent of two and a half ball dresses. Hemorrhage due to lacerations of the cervix and vagina, described by Gooch as "hemorrhages with a contracted uterus," might be properly treated by plugging.

DR. CHAMPNEYS referred to Dr. Dürrssen's paper in *Folkmann's Sammlung Klinischer Vorträge*. This gave a report of sixty cases so treated, and he thought a careful perusal would show that plugging was better treatment, as a last resort, than injection of perchloride of iron. If plugged properly from the fundus downward, the uterus did not expand above the plug, which, on the contrary, acted as an irritant and caused good contraction and retraction. The vagina was also tightly plugged. Of sixty-five cases of severe post-partum hemorrhage thus treated, six died, one only of sepsis. Any clean linen could be sterilized by boiling for five minutes in a saucepan with the lid on, to produce a uniform temperature of 212° F., or 100° C. The quantity of material required is less than would be supposed. Dr. Dürrssen stated, in 1889, that the injection of perchloride of iron was regarded in England as a practice as important as vaccination. It was at least twenty years out of date, if it ever was true.

DR. LEITH NAPIER asked as to the *rationale* of plugging the post-partum uterus. The practice was justifiable in the post-abortion uterus, which was a very different matter. He asked if normal retraction occurred with a plug and artificial clot inside the uterus. Except in those rare cases in which there was absolutely no attempt at contraction, described as uterine paralysis at the placental site, he failed to see the necessity for, or advisability of, the procedure. The idea was not new, but had never met with more than very limited adoption.

DR. LEWERS, who was not present when the paper was read and discussed, wished to explain that it is only in those desperate cases of post-partum hemorrhage for which the intra-uterine injection of perchloride of iron has hitherto been recommended, that he would advise plugging of the uterine cavity. He regards it only as a last resource when all the usual means fail to stop the bleeding. German and French statistics seem to show that plugging in such cases is much less dangerous than the intra-uterine injection of perchloride of iron, and at least equally efficacious.

REVIEW.

TRAITÉ DE GYNÉCOLOGIE, CLINIQUE ET OPÉRATOIRE.--A
TREATISE ON CLINICAL AND OPERATIVE GYNECOLOGY. By
S. Pozzi, M.D., Professeur Agrégé à la Faculté de Médi-
cine; Chirurgien de l'Hôpital Lourcine-Pascal. With 491
Illustrations. Paris: G. Masson. 1890. Pp. xxiv.-1156.

This is by far the most valuable French work on diseases of women which has appeared in the past decade, in that its keynote is contained in the words of Voltaire which are quoted in the preface: *Il n'y a pour quiconque pense ni Français ni Anglais; celui qui nous instruit est notre compatriote.* The common criticism which has been made on all the gynecological writings of our French confrères has been that they have not been pervaded with that broad cosmopolitan spirit which modern medicine demands. Even the most superficial reader must admit that the present book is a pleasing exception in this respect, since every page shows evidence of exhaustive research and judicious selection from the work of every nation. It is essentially practical, and, as such, is to be regarded as an important addition to the literature of the subject.

Some idea of the scope of the book may be obtained by a brief review of the table of contents. Book I., including three chapters, is devoted to antisepsis, anesthesia, hemostasis, and drainage; Book II. to gynecological examination; Book III. contains three chapters on metritis; Book IV., six on fibroid tumors of the uterus; Book V., three on cancer of the uterus; Book VI., seven on displacements; Book VII. deals with deformities of the cervix. Book VIII. with disturbances of menstruation (four chapters). Diseases of the adnexa are discussed in Book IX., which includes three chapters, and neoplasms of the tubes and ovaries in the following section. Separate chapters are devoted respectively to tuberculosis of the genital tract, hematocele, and ectopic gestation. In Books XIV. and XV. are described diseases of the vagina and vulva, while the concluding chapters treat of malformations of the genital organs. The introductory chapters are rendered especially valuable by the numerous excellent cuts, among which we commend those illustrating the different varieties of sutures. The same cannot be said of Fig. 68 (page 65), where a patient is represented as occupying "Sims' position" on the right (!) side, with the under leg stretched out straight. This is an unpardonable error. The number of specula are multiplied unnecessarily.

Book III. bears the confusing title, "*Des Métrites*," which we had hoped to see banished from modern treatises on gynecology. The confusion is deepened by the introduction under this heading of "*Pseudo-métrite*" (which is explained as an inflammatory condition of the endometrium accompanying disease of the adnexa and perimetrial tissues), "*Métrite proprement dite*," including acute and chronic metritis and endometritis, the latter being subdivided into the interstitial, glandular, polypoid, and post-abortum varieties. Lacerations and erosions of the cervix are treated under the same chapter—an unfortunate arrangement which will not commend itself to the American reader.

The chapter on fibroid tumors of the uterus receives the attention which its importance demands, being especially rich in illustrations as well as in references to the literature. The author's pathology here, as elsewhere, is marked by a clearness and omission of useless details. The same applies to the chapter on treatment. Chapter IV. (pages 294–352) contains a thorough demonstration of the surgery of fibroid tumors, which is not surpassed in any other work on general or operative gynecology. A separate chapter is devoted to an exhaustive review of the question of removal of the adnexa in cases of fibro-myoma, and another to the subject of pregnancy complicated by fibroids, which rightly belongs in a treatise on gynecology rather than in those on obstetrics, its usual place.

The important subject of malignant disease of the uterus is well discussed, more from a clinical than from a pathological standpoint; the symptomatology of incipient cancer is described briefly and graphically. The chapter on the operative treatment of carcinoma of the cervix is exceedingly good, the paragraphs on high amputation and total extirpation being as clear and incisive as we remember to have read. A lucid description of the method of forcipressure is given for the first time, Figs. 210 and 211 illustrating well the steps of the operation. An exhaustive comparison of the statistics of different operators, with reference to the relative frequency of recurrence after the two operations, leads the author to the conclusion that it is impossible to formulate an opinion from the various contradictory reports. "Logic," he concludes, "seems to me to oppose the paradoxical conclusion that partial removal of the tissue around the disease should be more efficacious than as thorough ablation as possible."

More attention is paid than usual to the treatment of inoperable cancer—a subject of vital interest to the general profession, and one that has been crowded into the background by the more brilliant achievements of surgery. The introduction of a considerable chapter on malignant disease of the corpus uteri is in itself a proof of the author's careful, thorough work. Adenoma uteri is properly recognized as a distinct condition, which has not received the attention that its importance merits.

In the chapters on displacements prominence is given to the surgical treatment, the technique of the Alexander-Adams operation, Schücking's method, and ventro-fixation being described at length. Under the section on prolapse of the genital organs are included the various operations on the vaginal walls, operations on the perineum being properly described elsewhere.

The three chapters devoted to inflammatory diseases of the ovaries and tubes are especially valuable and will repay careful study, as well as the hundred pages that include a thorough discussion of the subject of ovarian tumors. Neoplasms of the tubes, broad and round ligaments are regarded as sufficiently important to deserve a separate chapter, the foot-notes accompanying which show how exhaustive has been the author's study of a subject which rarely receives attention in works on gynecology. A careful résumé of the subject of tuberculosis of the genital organs (with copious references) forms a chapter of twenty pages—a more thorough treatment than it has received in any other recent work.

Book XII., on hematocèle, is followed by a monograph on ectopic gestation, in which an immense amount of information is condensed into a few pages, though without sacrificing

either perspicuity or practical details. Eighty pages are allotted to affections of the vagina, specific vaginitis being discussed *in extenso*; tumors are reserved for a separate chapter. Vesico-vaginal fistulæ are treated elaborately, attention being directed to the more unusual varieties as well as to the ordinary operations; the illustrations are clear and helpful.

A valuable chapter on laceration of the perineum is rendered somewhat confusing to the general reader by the number of different operations which are described and figured. The flap-splitting method is evidently a favorite with the author, since he dwells upon it at considerable length and introduces several modifications, although he admits that in many cases it is inferior to others. We can hardly agree with him that secondary perineorrhaphy can be properly performed under cocaine-anesthesia. Three chapters are assigned to affections of the vulva. The concluding section (three chapters, of seventy pages) deals with malformations. A carefully prepared index of subjects and another of authors form a pleasant innovation on French medical works, which are usually lamentably deficient in this respect.

In this hasty review we have done scant justice to the merits of a most excellent treatise on diseases of women, which may well bear comparison with any that has appeared during the past five years in either French, German, or English. Although essentially clinical in character, with a strong surgical tendency, pathology is by no means neglected. Unlike most of his countrymen, the author has a clear, concise style, avoids their usual prolixity, and goes straight to the mark. The sections on symptomatology are short but graphic; the descriptions of operations show that he is not a mere theorist, but a practical surgeon. That the author is a ripe student is evidenced by the amount of research which he has bestowed in the preparation of his work, and the discrimination with which he balances various opinions and culls from the rich store of material which he has collected such facts as are most useful to the reader. Nor is he a mere compiler. He has his own opinion on every disputed subject, fortified by ample personal experience, and does not hesitate to state it, though never dogmatically. It is a pleasure to see so large a number of new, well-executed illustrations, which add greatly to the value of the book. When so many ephemeral foreign monographs have been translated into English, it would surely be of advantage to those who are not familiar with French to have an early opportunity of reading in their own language a treatise which is so thoroughly abreast of the times as that of Professor Pozzi.

H. C. COE.

ABSTRACTS.

1. WIEDOW: PELVIC ABSCESS (*Arch. f. Gyn.*, xxxv., 3).—The author makes several suggestions of diagnostic value regarding intra- and extraperitoneal inflammatory exudates, and considers their origin and treatment. The presence of pus is more readily determined in extraperitoneal than in intraperitoneal abscesses. In the latter, fluctuation at the beginning of inflammation suggests a possibility of pus being present; an exploratory puncture will be of more positive value, but is dangerous; the clinical aspect of the case is important—fever with remissions and intermissions, the increasing emaciation of the patient, indicating suppuration. The treatment cannot always be positively formulated. Many abscesses point externally of themselves and heal; others rupture internally and cause peritonitis; in many fistulae result, with protracted suppuration. When certain that pus exists, the abscess should be incised, emptied of its contents, and drained. According to the situation of the pus, three varieties of abscess may be distinguished: the pus is either close under the skin, or deep in the pelvis, or we have to do with fistulous abscesses. In either case incision and drainage are indicated. For those deeply seated the author has recommended resection of the sacrum, as by this method the pus cavity is reached with rapidity and certainty. Another plan is that by which the ischio-rectal fossa is incised through the levator ani, and the abscess reached by splitting the recto-vaginal septum. Finally, the abscess may be reached through an incision above Poupart's ligament; this is only possible, however, when the peritoneum is not involved. L. R.

[While we believe with Wiedow that all collections of pus in the pelvic cavity should be treated by evacuation and drainage, we do not see the necessity of such severe procedures as sacral resection. In cases where the pus is beneath the peritoneum, it can ordinarily be reached by either a vaginal incision or by an extraperitoneal dissection above Poupart's ligament. Where there is a probability that the pus is intraperitoneal (tubal), an explorative laparotomy will allow either removal of the distended tube, or will supply such knowledge of its character as will allow the abscess to be emptied by a second extraperitoneal incision.—B. H. W.]

2. VEIT, J.: THE HEALING OF PERITONEAL WOUNDS (*Arch.*

f. Gyn., xxxv., 3).—V. has made experiments upon dogs, from which he concludes that fairly approximated peritoneal wounds will heal in five days without suturing. He recently performed Cesarean section upon a pregnant monkey, and closed the uterine wound by muscular sutures; subperitoneal sutures were inserted only in one place, and it was here that adhesion of the wound to the intestines was firm, the rest of the wound being non-adherent; the union of the uterine tissues was thorough. Under the microscope it was demonstrated that the superficial union between the peritoneal sutures was not so linear as between the muscular. He regards the peritoneal suture as superfluous. The peritoneum over a wound will heal without sutures if the wounded edges be accurately apposed.

L. R.

3. BAYER: HYPERTROPHY OF THE CERVICAL MUSCULAR FIBRES IN THE PREGNANT UTERUS (*Arch. f. Gyn.*, xxxv., 3).—The author shows that during pregnancy a marked increase in the uterine cervix must take place to form the lower uterine segment. His observations have taught him that the muscular fibres of the cervix, and even of the vagina, hypertrophy to as great an extent as those of the corpus uteri. He contends that the margin of the cervical mucous membrane and the decidua do not form the margin of the lower segment; the cervix participates in the hypertrophy of the uterine body during pregnancy. Measurements made during the pregnant and non-pregnant state of the organ showed that even in the second month the fibres are lengthened. From the third to the fifth and seventh months they also become thicker, especially those at the anterior and posterior wall. The external fibres may be distinguished from the middle and inner ones by their greater development. The cervix, therefore, grows during pregnancy; but as it does not become longer, it must unfold itself.

L. R.

NOTE.

DR. MAURY'S paper on the treatment of Pelvic Inflammation, in the January number of this JOURNAL, was read before the Southern Surgical and Gynecological Association, at Atlanta, on November 17th, 1890.

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ORIGINAL COMMUNICATIONS.

THE REMOTE RESULTS OF SHORTENING THE ROUND
LIGAMENTS FOR UTERINE DISPLACEMENTS BY
THE NEW OR DIRECT METHOD.¹

BY

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At the September meeting, 1888, I presented to this Society a new method of shortening the round ligaments for uterine displacements, and reported seven consecutive cases, five of which were operated upon according to this method. In the first two cases I adhered carefully to the original technique of Alexander, in which the primary incision is made directly over the spine of the pubes, an inch and a half or more in length, upward and outward along the course of the inguinal canal. By subsequent dissections through the subcutaneous adipose tissue and fascia, the wound is deepened until the aponeurosis of the external oblique muscle is exposed. As simple as this would seem, Alexander says of this first step:

¹ Read before the Gynecological Society of Chicago, November 21st, 1890.

“In its performance many failures have occurred. Half-way through the fatty tissue, especially in stout subjects, a thick aponeurosis is met with which simulates in appearance the aponeurosis of the external oblique. Here many operators stop and search for the ligament in some round aperture that looks like a ring. Some find out their mistake when, in scratching about, the true aponeurosis accidentally comes into view.”

After further admitting that the end of the ligament may be thus teased away unrecognized and the wound unwarrantably deepened, he goes on to give explicit directions for avoiding such unfortunate accidents. That these are inadequate and unsatisfactory may be inferred from the published reports of some prominent operators, who, in following his instructions, have at times wholly failed to find the round ligaments.

Granted this initial step to have been successfully performed, the fascia covering the external ring is next cut through, and the round ligament, if seen, seized and raised out of the inguinal canal with a pair of dissecting forceps. Often, however, this portion of the ligament is so lost and obscured in the surrounding fat, muscular and connective tissue, that the entire contents of the canal must be pulled out *en masse*, spread over the finger, and its isolation accomplished by tedious dissection.

It is at this point, in the old operation, that the greatest disadvantages arise, for it is here that the fibres of the ligament diverge in various directions, some to become embedded in the surrounding tissues of the inguinal canal, others to be attached to the pubic spine, and a few to find their way down to the vulva and terminate in the labium majus. Hence the difficulty, in its frayed and attenuated condition, of picking up a satisfactory and strong ligament. Add to this the probability of rupturing the weakened ligament by the undue force necessary to drag it through the ring at an acute angle with its abdominal course (an accident which Mundé confesses to have happened to him three times), and you have in substance the factors which have militated against the general acceptance and usefulness of a valuable operation.

That the fault does not lie in the theory of Alexander, but in the technique of its application, is apparent from the

experience of other operators. Dr. J. A. Adams, of Glasgow, whose name is associated with that of Alexander in first suggesting the operation, says of the experience of pioneer operators abroad: "The operation is one that all and sundry cannot perform," and adds: "It is amusing to hear otherwise well-qualified obstetric and general surgeons condemning the operation because they consider the round ligaments to be mythical structures, or because they have pulled out something and passed a few sutures through it."

Among our own surgeons there are those sufficiently candid to acknowledge that their early failures were not due to the absence of round ligaments in their patients. Dr. Mundé, in the November number of the *AMERICAN JOURNAL OF OBSTETRICS*, 1888, says, in referring to previous publications of his: "In these articles I felt justified in commending the principle of the operation, but doubted whether it would always be practicable, owing to the difficulty at times of finding the ligaments. Since then my increased experience with the operation leads me to modify the last part of this statement, for I now believe that my failure to find the ligaments at all in my third, and on one side in my second case, was my fault, and was due to my not recognizing the exact anatomical landmarks indispensable to the easy seizure of the diffuse terminal portion of the ligaments." Other and similar testimony might be quoted to the point, but in this brief paper we will be content with these two eminent authorities.

I wish to call attention again to the method of operating which I brought before the profession in my paper upward of two years ago.

I do this for two reasons: First, I can now speak with the utmost confidence of its practical utility and the permanence of its successful results; and, second, many of its distinguishing features have been appropriated by other operators, notably Dr. G. M. Edebohls, of New York, who presented at the Tenth International Congress at Berlin a very creditable résumé of the operation. While I congratulate the doctor on the very able manner in which he brought it to the notice of the foreign medical profession, I would remind him that a priority of about a year and a half of practical demonstration belongs to Chicago.

As I stated in my previous paper, the operation was first suggested by Dr. J. Frank, of this city, and, after its utility had been demonstrated on the cadaver, first performed on the living subject in No. 3 of my reported cases.

I propose to call this the direct method from the following distinctive advantages:

1. The single sweep or two with which we cut down upon the inguinal canal or the glistening aponeurosis of the transversalis muscle, directly over the internal ring, or canal of Nuck.

2. Through a single nick in the course of the separated fibres of this aponeurosis the blunt hook may often be passed into the canal and the round ligament pulled out in less time than it takes to tell it; or, by lengthening the incision, it may be exposed along the canal in its entirety.

3. There can be no doubt here of the identity of the ligament, as a duplication of the peritoneum is seen surrounding it at its abdominal extremity.

4. The force used in pulling out the ligament is both brought to bear upon it at its strongest portion and is in a direct line with its intra-abdominal course. This is in strong contrast to the old mode of pulling upon its frayed-out terminal fibres at an acute angle with its inner and stronger portion and over the sharp, resisting surface of the ring.

5. Aided by the sense of sight, and seizing the ligament above the inguinal canal, we can feel assured that we are drawing upon the abdominal portion of the ligament, and not merely stretching its inguinal section.

6. As there are few or no adhesions at this portion, there should be absolutely no teasing of the tissues. Consequently, where aseptic methods are used, there should always be healing by first intention, and drainage and after-treatment be relatively simplified.

7. Where the ligament is strong and fully developed, as it is in its upper portion, it can be more securely anchored or made fast to the surrounding tissues.

8. Hernia is guarded against by deep sutures constricting the canal about the internal ring, insuring firm union where most needed.

9. The intercolumnar fibres and tissues about the external ring are not interfered with or irritated in any way.

Inasmuch as many of the abdominal muscles have fibres converging about the pillars of the external inguinal ring, movements of the body often create disagreeable tension and cause pain in a wound situated here, and I have observed these distressing symptoms to continue for weeks afterward. I attribute their absence in my later cases to the fact of avoiding these sensitive areas and minimizing mutilation by the higher incision.

Since time is an important consideration in judging of the success or failure of this operation, I have purposely reported to-night only those cases in which the round ligaments were shortened upward of two years ago.

CASE I.—Mrs. L., age 33, married twelve years, has one child 10 years old; has suffered much pain at the menstrual period for many years, being scarcely ever free from distress in the pelvic organs.

During the last year she has been troubled with menorrhagia and metrorrhagia, and upon introduction of the sound bleeding is invariably excited. Examination showed the uterus large, prolapsed, and retroverted, cervix and perineum torn. This patient was sent to me by a physician in Central Nebraska in whom I had great confidence, and who had had her under treatment during the greater part of the previous two years.

March 14th I curetted the uterus for vegetations, removing a large quantity. As the wool vaginal tampon, persistently used since February 26th, had little effect in restoring the prolapsed and retroverted uterus, and as a pessary could not be tolerated, I performed Alexander's operation April 21st, with the assistance of Dr. Henry T. Byford.

The wound did well, and the patient was up and about at the end of the fourth week. In the ninth week, when she returned to her home in Nebraska, the uterus was held well forward and high up in the pelvis. August 1st of the same year she reported herself by letter in better health than she had been for years, and doing her own housework, which it had long been impossible for her to do. I learn through friends that she subsequently had a severe and exhausting at-

tack of typhoid fever, lying upon her back for five or six weeks. It would seem reasonable that this should have some deleterious effect upon the uterine supports, but I learn, from a letter received last spring that she was still enjoying good health and had not required the services of any physician since the operation, nor had she been examined. This gave me no definite information as to the position of the uterus or condition of its supports, but from absence of symptoms it may be inferred that there has been no return of her former troubles and that cure has been effected.

CASE II.—Mrs. W., 35 years of age, has borne eight children and had two miscarriages; has been under local treatment constantly for two years, and has been more or less of an invalid for ten. Uterus retroverted and strongly retroflexed, with some adhesions from former pelvic inflammations. Cervix and perineum were lacerated, and considerable pain was caused by attempts to replace the uterus.

February 6th, 1888, the uterus was dilated for the purpose of straightening, and the lacerations of cervix and perineum were repaired by her physician, Dr. R. N. Hall. The flexion returned, her condition was not improved, and I was asked to do Alexander's operation.

May 31st the round ligaments were shortened about four inches, using the old method of operating. Some difficulty was experienced in picking up the ligaments, necessitating considerable disturbance of the tissues. There was sloughing of the wound in this case, referred partly to the teasing of the tissues, and partly to the patient herself, who tore away the dressings and infected the wound with her nails. She was an extremely nervous and unmanageable patient, and on June 19th left the hospital without the knowledge of her attending physician, who abandoned the case. Under the circumstances convalescence was tedious and protracted, and her former suffering was for a time enhanced. Dr. Saunier, who took charge of the case about a year and a half ago, says that the uterus at that time was held in good position, but considerable pain was experienced from tension upon old adhesions resulting from pelvic inflammations prior to the operation. Pregnancy ensued, with relief from all her former symptoms. No difficulty was experienced at the birth of the child—a fine

specimen about five months old—and she herself is strong and hearty, doing her own housework and presenting quite a plump and youthful appearance. Dr. Saunier says that at present the uterus is healthy and in its normal position.

CASE III.—Mrs. P., age 36 years, has suffered for eleven years from prolapsus or procidentia of the uterus; ovaries large, tender, and prolapsed, so that a pessary was tolerated with difficulty. Was able to do little or nothing in the way of household duties, though the mother of a large family. Menses were irregular, profuse, and painful. When first seen, in May, 1888, the uterus was enlarged and heavy, appearing at the vulva, and the effort of straining or bearing down forced it out of the vaginal orifice. Vagina was capacious, and rectal and vesical walls greatly relaxed. She reported having been under local treatment by a prominent physician during the last two years, and that her condition had become worse rather than better. The operations of anterior and posterior colporrhaphy were advised, and a few weeks later performed with only partial relief. August 16th, 1888, the round ligaments were shortened about four inches by the new or direct method. The wound healed promptly by first intention. In the fourth week patient was up and about, and left the hospital at the end of the fifth, feeling quite well, with the uterus in normal position. She was seen, six weeks after the operation, at her home, and expressed herself as still feeling quite well. Had little or no pain at the last menstrual period, and was engaged in light household occupations. Examination showed uterus held well up, and scarcely resting upon the Hodge pessary which she had been instructed to wear.

November 12th, 1890, she came to my office at my request, and I made a careful examination. Instead of the former condition of procidentia, engorged, heavy and inflamed uterus, I found the uterus healthy, normal in size, measuring two and three-quarter inches in depth, and free from tenderness. The anterior and posterior vaginal walls were in apposition, and the former rectal and vesical symptoms had disappeared. In strong contrast to her former worn and anxious appearance and emaciated physique, she now presents a cheerful counte

nance, and claims to have gained fully thirty pounds in the past year and a half.

CASE IV.—Mrs. E., age 23, married four years; one child and two miscarriage; has suffered three years with prolapsus and subinvolution following the birth of her child. She had also lacerated cervix and perineum, and suffered more or less pain, with constant dragging sensations, at the menses and during the entire month. Flow profuse, irregular, and followed by leucorrhea; reflex symptoms were of great annoyance and not relieved by the usual remedies.

June 1st, 1888, I operated upon the cervix and perineum, with only slight relief from the reflex symptoms. (The previous treatment in this case, covering many months, consisted in the use of the vaginal wool tamponade and postural treatment, likewise without benefit.)

August 24th, 1888, at St. Elizabeth's Hospital, I shortened the round ligaments by the direct method. The operation was followed by no unpleasant symptoms, and at the end of the third week the patient was allowed to sit up, returning to her home at the end of the fourth. Five weeks after the operation she had none of the former distress in back and sides, dyspeptic symptoms rapidly disappearing. The uterus remained in excellent position and involution was taking place rapidly. This patient has been under observation since the operation, and her condition has been most gratifying, notwithstanding the exacting demands of a life of social and domestic responsibility.

In April, 1889, being in the third month of pregnancy, she overtaxed her strength in fitting up and moving into a new residence, and brought on a miscarriage. She recovered, however, without any return of her pelvic ailments, and when last at my office, September 28th, 1889, the uterus was normal in size, in excellent position, and the effects of the operation eminently successful.

CASE V.—Mrs. N., age 29, married eleven years; three children and two miscarriages; nine years ago began to have backache and bearing-down pains. From year to year these have become worse, until she has become incapacitated from the performance of household duties.

When first examined, about January 1st, 1888, the uterus

was found heavy, prolapsed, and retroverted, cervix and perineum badly torn, both ovaries enlarged, prolapsed, and tender, so that no pessary could be endured.

In June, 1888, the double operation upon cervix and perineum was performed, and Alexander's operation on August 25th, at her home. Though lacking conveniences and trained attendants, the patient's recovery was rapid and satisfactory, requiring but little more care and attention than an ordinary cervix and perineum operation.

In the fifth week after the operation I found the woman about the house and attending to her household duties, but exercising caution, as she had been strictly enjoined. The prolapsed and retroverted uterus, as well as the tender and enlarged ovaries, was now found drawn well up, the latter beyond reach of the finger. No pain was experienced, and the patient felt herself recovered, though showing some anemia and weakness from confinement incident to the two operations and the result of her former condition.

November 20th, 1888, this patient came to my office. The uterus was in good position, but larger and heavier than normal, with some tenderness at site of the cutaneous incision and along the course of the newly attached ligaments. Close questioning brought out the fact that she had been exerting herself unduly in her domestic duties.

She was instructed to continue the use of the pessary and the abdominal support, and to persist in the postural treatment as long as tenderness continued, and to be more conservative of her newly acquired strength. These symptoms disappeared within the next few weeks; but whenever her ambition got the better of her good sense during the following six or eight months, she suffered a return of some of her minor symptoms.

November 12th, 1890, she reports herself as feeling in the best of health, her general expression and appearance fully confirming her assertions. She is doing her own housework, and has done so since a few months after the operation. The uterus shows the slight increase in volume consequent upon having passed through years of chronic inflammation, but its internal measurements are only two and three-quarter inches; it is in normal position, and there is neither leucorrhea, menstrual derangement, nor any reflex symptom.

CASE VI.—Mrs. G., age 34, married three years, and sterile; former occupation, laundress and seamstress; has suffered retroversion and prolapsus for fifteen years, with distressing pains in back, dysmenorrhea, and irregular menses followed by leucorrhea. She was treated for several months at the North Side Free Dispensary, and at her own urgent request Alexander's operation was done at the Polyclinic Hospital, August 27th, 1888. In this case the healing was so prompt that, being obliged to leave the city for a short time, I yielded to the temptation to remove the stitches—in this case silk—on the fifth day. I left the case in the care of Dr. C. W. Leigh, who reported satisfactory progress until subsequent dressing on the seventh day. On this day some sudden movement in bed resulted in a slight gaping of the wound upon the left side. On account of this the patient was kept in bed for the wound to heal by granulation. A slight fistulous opening remained, necessitating a second opening of the wound, when one of the buried sutures—silkworm gut—was removed, and no further trouble was experienced. When discharged from the hospital she was in excellent condition and the uterus was well in place.

September 9th, 1889, the woman expressed herself as feeling as well as she ever did in her life; said she had hardly felt a pain or an ache during the past year; the uterus was still normal in position and size; ovaries could not be felt by ordinary digital examination.

November 11th, 1890, patient came to my office at my request. She said she was in excellent health throughout the year until the heat of last summer, when her appetite failed; and not menstruating during July, she consulted Dr. Henrotin during my absence from the city, who pronounced the operation perfect, said she had no uterine trouble, and referred the suppression of the menses to anemia.

Iron was given, and she improved and menstruated the following month, and regarded herself as quite well.

On examination, to my surprise I found a tumor behind the uterus half as large as my fist. With the exception of this the pelvic organs were in healthy condition and in normal position, except that the neck of the uterus was crowded slightly forward by the size of the growth. As the discovery

of this tumor was quite accidental and its presence had caused her no inconvenience, and as she had never suffered from ovarian symptoms or disease, I am disposed to regard it as an incipient cyst of the ovary, and certainly in no way connected with the operation.

CASE VII.—Mrs. S., age 27, married five years; three children; had retroversion of the uterus and ovarian prolapse; menses always painful and often prolonged eight days; pain in back, uterus subinvolved, cervix and perineum torn, patient very much reduced and unable to work. Trachelorrhaphy and perineorrhaphy were performed in June, 1888, and a uterine support subsequently used. This, combined with vaginal tamponade extending over a considerable space of time, failed to relieve her distressing symptoms.

September 11th of the same year the round ligaments were shortened about four inches at St. Elizabeth's Hospital. At the end of four weeks she was discharged from the hospital feeling well, with the uterus and ovaries in good position. In the following March she became pregnant, and went to full term without any untoward symptoms. Labor was normal, and her convalescence only interfered with by painful and troublesome nipples. As a consequence of early weaning the child became puny and poorly nourished, and was a source of great anxiety to her through the summer months. The child died in September; and having lost two previous children, its death was a great shock to her, and, being pregnant again, she became a victim of hysterical attacks followed by melancholia. All this occurred during my absence in Europe, and she was taken to St. Elizabeth's Hospital.

Dr. Frank examined her carefully for any uterine or ovarian trouble, and pronounced her entirely free from any pelvic disease, and the uterus in normal position for that period of pregnancy.

November 16th I called at the woman's house and found her much improved in her mental condition and assisting in the domestic duties, cheerful and bright, with no indication of her former depressed or irritable moods. The indications are that pregnancy will now advance to a successful termination.

In the above cases it will be seen that the indications for

the operation were as follows: Retroversion and prolapsus of both uterus and ovaries in Cases IV., V., and VII.; pro-cidentia with enlarged, tender ovaries in Case III.; while Cases I., III., and V. presented the usual menstrual disorders indicative of the severer types of uterine and ovarian displacements, and were upward of ten years' standing.

Cases IV. and VII. were of more recent date, being respectively of three and five years' duration; but pain was a prominent symptom in both, and had resisted careful and persistent treatment.

Case VI.—of fifteen years' standing—had very naturally tired of routine local treatment, and, having personally observed the benefits accruing in other cases, earnestly requested the operation.

Case II. was the only one in which adhesions were any material obstacle to the restoration of the uterus to a normal position, though they existed in a minor degree in Cases I., V., and VII.

As I have before stated, pessaries had been formerly tried in six of the seven cases, but in each of those with ovarian complications they were a source of too great irritation to be tolerated, and in the remaining two had resulted in no appreciable benefit.

65 RANDOLPH STREET.

THE CARE OF LYING-IN WOMEN.

BY

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(With two woodcuts.)

THE careful reader of the medical journals of to-day cannot fail to notice that in both medicine and surgery the tendency is to employ simple methods of treatment; that whereas, a few years ago, the physician wrote "shotgun" prescriptions

and the surgeon deluged himself and assistants with spray, to-day simple remedies are employed and with better results.

Can this be said of the methods employed in obstetrical practice? Are we following as closely as possible the lines laid down by nature, or have we strayed so far into the wilderness of theory that we need a medical Moses to lead us out? Would it not be better to do away with some of the methods adopted through ignorance or fancy, and employ a common-sense plan of treatment?

Obstetrical writers and teachers differ so widely in their methods of treating the parturient woman that the student finds it difficult to decide which one to adopt. Thus, for example, one author says that the woman should not be allowed to move in bed for at least a week; another, that she should lie on either side or on her back, as she prefers; another, that she may even get up in three or four days, and so on. Which of these, if either, is correct? How shall we decide? Suppose we go back to first principles—bearing in mind, of course, the changes in condition civilization has brought about—and, taking a woman who has just been delivered, follow her through her lying-in period.

Immediately after the delivery of the placenta, remove the soiled bed-clothes and wash the woman thoroughly with an antiseptic solution. Then make a careful examination to see whether the pelvic floor or perineum is torn, and, if torn, sew it up at once, using every antiseptic precaution.

Why is the primary operation preferable to the secondary? The fibres of the levator ani muscle have just been severed; they have been stretched to so great an extent that they have lost somewhat their contractility; the ends can easily be brought together, and by the time the woman gets up the parts will have healed. She will not be as likely to have a retroverted uterus, there will be no rectocele, and her health will not be impaired as it would be with the parts in an abnormal condition.

How soon should the child be put to breast? As soon as it has been washed and dressed. Why so soon? Because it is according to the teaching of nature; because it brings on uterine contractions; because the child needs the laxative stored up in the breasts. Have you ever seen a bitch in labor? As

soon as a pup is born she pushes him up to the teat, which he immediately seizes. All female animals except civilized woman suckle their young almost as soon as they are born. Nature teaches them to do so. Are we wiser than nature?

How often should the child be allowed to nurse? Every two hours during the day and twice during the night. It is better to have regularity about it, for both the mother's and child's sake.

Shall a binder be applied? On general principles, no; but the abdominal walls of a civilized woman are weak and not capable of contracting as they should, therefore it is better to apply one for from seven to ten days.

What shall the woman eat and drink? As she will be very thirsty, give her plenty of cold water, milk, beef tea, broths, and porridge. If she is hungry, give her eggs, rice, toast, and similar foods for two or three days, after which time she can eat beef, mutton, chicken, etc., with bread and potatoes. Do not starve her, but remember that she has to eat for herself and child.

What position shall the woman assume in bed? For twenty-four hours lying quietly on her side or back; after that she may sit up in bed to nurse the child, and after ten days she may sit up in a chair every day. She should always, after the first twenty-four hours, sit up to empty the bladder and rectum, for the reason that with most women it is difficult to urinate and disgusting to defecate while lying on the back. These reasons are sufficient, but another will be given later.

Why should she be allowed to move about so freely? In a recent article¹ I demonstrated the utero-vaginal angle, formed by the crossing axes of the uterus and vagina, and that the parturient canal is angular instead of curved (see Fig. 1). The maintenance of the uterus in its normal position depends solely on the integrity of the utero-vaginal angle, and if the woman is kept in the recumbent position the heavy uterus will fall back, the utero-sacral ligaments will shorten, and we have resulting retroversion, prolapse, and a long list of evils.

With the exception of the enlarged uterus, the parts present, after labor, the same appearance they did before preg-

¹ AMERICAN JOURNAL OF OBSTETRICS, December, 1890.

nancy occurred, and our aim should be to keep the uterus forward in its natural position, so that, when the woman is through with her lying-in, she will be, so far as her pelvic organs are concerned, in a perfectly healthy condition. This we can do by allowing her to lie on her side or abdomen, to sit up to nurse the child and to attend to the calls of nature; but she should *not* be kept on her back, for obvious reasons.

How often shall the vagina be douched? Once, immediately after labor, if the case be normal and there are no lacerations. Should the parts be torn, they should be brought together, the suture line protected with iodoform-collodion,



FIG. 1.—Showing the utero-vaginal angle.

and a douche given every day until union has taken place. Should there be evidences of the decomposition of retained membranes or blood clots, the uterus should be thoroughly but carefully cleaned out. Always remove any offending material from the uterus, for the same reason you would remove a foreign body from any other wound.

While I do not deem it necessary to douche the vagina as frequently as some writers recommend, I do insist on keeping the external genitals scrupulously clean. They should be washed with soap and water, and rinsed with a weak carbolic solution, twice daily. The absorbent pad should be changed

at least every six hours, and oftener if the lochia is offensive. When lacerations complicate the case, a small iodoform-gauze tampon should be kept in the vagina for twenty-four hours for antiseptic purposes; after that time the external pad will be sufficient.

How soon should the bowels move? As the rectum is usually emptied during or before labor, there is no immediate necessity of moving the bowels; but if three days elapse without a movement, give a compound rhubarb pill or an enema of warm soapsuds. (It must be borne in mind that the recto-vaginal septum is still tender and weak, and that it is necessary to soften the feces so that the woman's suffering may be lessened.) Should neither of these measures prove effective, an enema consisting of Epsom salt 3 ii., glycerin 3 ii., hot water 3 ii., may be given, and if necessary repeated at intervals of one hour; or Epsom salt 3 i., compound tincture of gentian ʒx., hot water 3 i., may be given by mouth every hour until the desired effect is obtained. Castor oil seems to have gone out of fashion; this is a mistake, for we have nothing equal to it in this class of cases. It can be given in the following mixture without having its disagreeable taste recognized:

℞ Ol. Ricini.....fl. ʒ ss.
 Tr. Opii camphorat fl. ʒ i.
 Vini portense.....fl. ʒ i.
 M. S. Take at one dose.

The bottle should be thoroughly shaken, and the mixture poured into a warm wineglass and drunk before it separates.

After this the bowels should move every day. If they do not move spontaneously, give the woman fruit, figs, and massage of the belly. Should these means fail, give the following, taken from Skene's "Diseases of Women":

℞ Extracti Podophylli..... 3 i.
 Tincturæ Colocynthis 3 ij.
 Tincturæ Belladonnæ 3 i.
 Glycerini 3 iv.
 Syrupi Acaciæ..... }
 Tincturæ Cardamomi Comp..... } aa ʒ i.

M. S. Teaspoonful noon and evening before meals. Should this act too freely, one dose daily will be sufficient.

As stated above, the woman should sit up while defecating. To some this may seem a very dangerous proceeding, but it is not, as the woman can easily be placed on a sick-chair if the following method is employed: Swing her legs out of bed, so that she will be sitting on the edge of the bed; place a sick-chair beside her, and carefully assist her on to it. She should not be allowed to strain while defecating, for fear of injuring the recto-vaginal septum. After defecation assist her back to the bed and let her lie quietly for a time. She will not be greatly fatigued; in fact, it has been my experience that the fatigue was less than in cases where a bedpan was used.

Of course there are cases in which it would be impossible for the woman to sit up, such, for example, as extensive lacerations when the primary operation could not be done, or post-partum hemorrhage, or puerperal fever; but in the great majority of cases it is possible, and, for reasons given below, should be insisted on.

How soon should the bladder be emptied? Not later than twelve hours after labor. A bedpan should be placed under the woman, and, if possible, she should urinate in the recumbent position; if she cannot do this, raise her carefully to the sitting position, when, in all probability, she will be successful. Should she still be unable to empty the bladder, lay her gently back upon her pillow and catheterize her; this should be done with the fullest antiseptic precautions, that no septic material be carried into the bladder to set up a cystitis.

After twenty-four hours the woman should sit up every time she micturates, and, after the bowels have been moved, she can use the sick-chair instead of the bedpan, if she prefers to do so. After each micturition, any urine that may have lodged on the labia should be gently wiped off and the absorbent pad reapplied.

The breasts require little care if kept clean. Should they become sore, they should be washed with a four-per-cent solution of boracic acid, wiped gently with a piece of soft linen, and protected so that they will not be injured by friction of the clothing. If they are chapped or cracked, a nipple shield should be used, and the nipples anointed with carbolyzed vaseline or protected by flexible collodion. In most cases a little care at first will prevent any trouble.

If there is a deficiency of milk, the woman should drink largely of milk, tea, water, or koumyss. If there is too great a supply, her diet should be dry—*i.e.*, she should abstain as far as possible from drink of any kind. Saline laxatives or iodide of potash may be given, or the breasts may be strapped.

The woman should have a warm bath every day, and her belly gently rubbed to hasten the return of the walls to their normal condition. After the bath she should be carefully but lightly covered, that she take no cold.

The temperature of the room should be from 65° to 70° F. The room must be thoroughly aired every day and well ventilated all the time, care being observed that there is no draught over the bed. Plenty of good fresh air is better than tonics. Do not be afraid of it.

After-pains can usually be relieved by making hot applications to the hypogastrium, and I have found nothing that answers the purpose better than a bag of hops. If this is not sufficient, a pill containing quinine gr. i., powdered opium gr. ss., may be given every two to four hours.

One very frequent—and it seems to me entirely avoidable—pathological condition following labor is retroversion of the uterus. For about two months after labor the uterus is enlarged and heavy; naturally the fundus will seek the lowest place possible, for the ligaments are so elongated that they do not guy it up in its proper position, and it rolls about like a ship in the trough of the sea.

In order that ultimately it may retain its proper position, it is necessary to preserve the integrity of the utero-vaginal angle. This cannot be done if the woman is kept on her sides and back for two or three weeks. Why? If the uterus is allowed to remain any length of time in a retroverted position, the posterior vaginal wall and the utero-sacral ligaments will be shortened by the process of absorption that is so actively going on at this time, so that when the woman, after two or three weeks, is allowed to sit up, the fundus is held down and cannot come forward. On the other hand, if the woman sits up to attend to the calls of nature, the uterus will be tipped forward into its proper position, the posterior wall and ligaments will not be shortened to so great an extent, and retroversion will not follow.

That the utero-vaginal angle may be preserved, it is essential that the lacerated perineum or pelvic floor be immediately repaired ; for, even in the three days which usually elapse before the bowels are moved, the rectum will bulge into the rent, the edges will be separated, the upper portion of the recto-vaginal septum will be drawn down, and a retroversion, with all its attending evils, will result.

It is the imperative duty of the obstetrician to carefully examine every woman he attends in labor, to see if a laceration exists ; and should he find one, it is his duty, unless the woman

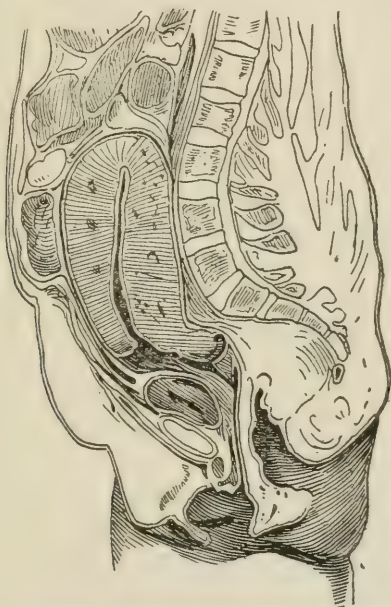


FIG. 2.—Showing how the uterus falls back when the woman is in the dorsal position.

is absolutely unable to bear the operation, to repair it at once, for reasons already given.

That the recumbent position, maintained for so long a time as is usually the case after labor (from nine days to three weeks), is a frequent cause of retroversion there can be no doubt ; and if retroversion existed previous to the pregnancy, there can be no better time to cure it than while the woman is recovering from her labor. Why ? The uterus during pregnancy was enormously enlarged ; the ligaments were necessarily elongated to allow the fundus to rise into the abdominal

cavity. After labor involution begins, the uterus decreases in size, the ligaments shorten, until at about the end of the second month they are restored to their normal size and length. Now, if the woman remains on her back for two or three weeks, the uterus will fall back on the sacrum (see Fig. 2); and as involution goes on, with the uterus in that position, it will readily be seen that the posterior uterine ligaments will become shortened, and the anterior ligaments remain longer than they should, and when the woman gets up from childbed her uterus will remain retroverted; whereas, had she assumed the upright position, as I have suggested, the ligaments would have been equally shortened and the uterus maintained in its proper position.

We see in the journals and text books page after page, and chapter after chapter, on antiseptic midwifery, on ectopic gestation, on puerperal fever (Lusk alone devotes no less than sixty-four pages to puerperal fever), on puerperal eclampsia, etc., but not one word on the necessity of guarding against retroversion. Is there any excuse for this oversight? If a surgeon should allow a joint to remain dislocated, he would be sued for malpractice and would justly be considered an unsafe man to employ; and no less justly should the obstetrician be considered unscientific, unskilful, and untrustworthy if he allows a woman to get up from childbed with a dislocated uterus.

The fact that many women escape a retroversion in spite of unskilful treatment does not alter the case; on the contrary, it proves that, if properly treated, no woman need have a retroversion after childbirth.

Cleanliness in obstetrical practice is of very great importance, but of still greater importance, both for the woman's present and future welfare, is the return and maintenance of the uterus in its proper position.

If the obstetrician is aseptic, if his hands, arms, and instruments are surgically clean, and if he insists on the cleanliness of the woman, he need have no fear of septic poisoning; but while keeping the woman clean, do not deem it necessary to irrigate the vagina twice daily, for, if nothing septic has been carried in, there is the greatest probability that, in the majority of cases, nothing septic will come out. But should

there be decomposition of anything that may be retained in the uterus, *wash out the uterus*; do not try to remove it by washing out the vagina.

In closing this paper I wish to call attention to seven rules the obstetrician should always follow in his treatment of a lying-in woman: 1. Keep the woman *clean*, locally and generally. 2. Give her all the nourishing food she can digest. 3. Keep her bowels open. 4. Give her plenty of fresh air. 5. See that she sits up to empty the bladder and rectum and to nurse the child. 6. See that the uterus is in its normal position. 7. *Never* allow a woman to get up from childbed with a retroverted uterus.

A SPECIMEN OF TERATA KATADIDYMA.

BY

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(With two woodcuts.)

FROM time immemorial we have heard of monsters and curiosities of all kinds, and in museums all over the country we find copies of the original in wax and plaster casts, etc., but it is not often that we come face to face with such an object, in flesh and blood, as is here presented.

Dunghlison gives as his definition of a monster any organized being having an extraordinary vice of conformation or a preternatural perversion of every part, or of certain parts only.

The main varieties of malformations are: (1) Those in which certain parts of the normal body are defective. (2) Those produced by fusion or coalition of organs. (3) Those in which parts, united in the normal state, are separated from each other as by clefts and fissures. (4) Those in which normal openings are occluded—atresia. (5) Those by excess, or in which certain parts have a disproportionate size. (6) Those

in which one or more parts have an abnormal position. (7) Those affecting the sexual organs.

Many opinions are entertained as to the origin or causes of these monstrosities, but three only are worth mentioning. They have been attributed (1) to the influence of the maternal imagination on the fetus in utero; (2) to accidental changes



FIG. 1.—Terata katadidyma.

experienced by the fetus at some period of its uterine existence; and (3) to a primitive defect in the germs. The second, that of accidental changes, seems to be the only one that is rational.

Fright, injury, etc., causing hemorrhage or partial rupture of membranes with incomplete loss of contents, might make them, but we have no fact to prove it. All gross errors of development are pronounced before the eighth week of preg-

nancy, which is antecedent to the period usually assigned for the influence of maternal impressions.

Double monsters are of two kinds: (1) equal or perfect, and (2) unequal or parasitic. It is a curious fact to notice that union always takes place between homologous surfaces of the bodies, viz., ventral to ventral, and not to dorsal or lateral.

They are the product of a single ovum, but whether they originate by fusion, fission, or radiation seems to be a very unsettled question.

In many cases of joined twins, each of the individuals which combine to form the union is symmetrically developed, and the vice of development at site of union affects both individu-

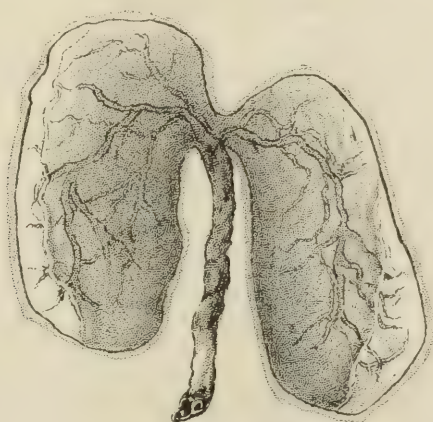


FIG. 2.—Placenta of monster.

als in an equal degree. In other cases, however, one individual is larger and more perfectly developed than the other. The larger frame will represent the main body or parent stock, while the smaller individual will appear as a parasitic appendage.

I find numerous cases reported of double-headed monsters combined in all sorts of conditions, but can find no mention of one exactly like the one here presented.

The child, a female, measures 14 inches in length and weighs $7\frac{1}{2}$ pounds. All the parts are perfectly developed except the cranial vaults. The sternum is single, but slightly broader than normal; the neck is single, arising from the common shoulders and beginning to separate into the two heads at

about the position of the hyoid bone. The complete separation of the heads, however, does not take place until after the formation of the ears, as seen in Fig. 1. The spinal columns are distinctly visible as far as the sacrum, and their separate origin can be easily made out, although more or less fused together. The heads unite posteriorly at about the junction of the occipital with the parietal bones.

The cord was single, consisting of the one vein and two arteries, but the placenta had a peculiar double formation, branching off into two divisions, each of which seemed to be perfect in itself, as seen in Fig. 2.

I regret very much that an autopsy could not be obtained.

The history of the case is as follows :

I was called, in the afternoon of April 10th, to see Mrs. C., in labor with her third child. I found her much exhausted, with a pulse of 120, skin dry, and face anxious. On examination per vaginam, the os was found dilated to the size of a silver half-dollar, and what was thought to be a breech presentation was made out, after a great amount of fingering and annoyance to my patient. I was unable to get a very clear history, as the midwife in attendance was not disposed to make very lucid replies to questions. The woman had been in labor for thirty-six hours, the waters having come away the preceding night.

It was the beginning of her seventh month of pregnancy.

The os was manually dilated, but the dilatation was very gradual on account of its very tense condition, and at 10 P.M. I succeeded in delivering this monster, which came down heads first, notwithstanding my diagnosis of breech presentation.

The child lived for about fifteen minutes, gasped a few times, moved its legs and arms spasmodically, and died. The placenta was double, and was extracted with considerable trouble about one hour after delivery of child. The after-history was uneventful, and the patient is now walking about her room and expresses herself as feeling perfectly well.

Almost every individual—including several physicians to whom I have shown this monster—has asked if the mother had seen anything during pregnancy which could have caused the deformity. I wish to demur from placing the blame of

all our misfortunes and monstrosities upon the tender yet much-slandered sex. As we understand the teachings of anatomy and physiology, the fetus in utero has but a physical connection to the mother. The only contact, soon after pregnancy begins, is through the medium of the placenta, which is the organ through which oxygen and the elements of nutrition are conveyed to the fetus, as the stomach and lungs serve to nourish and oxygenize the blood and tissues of adults. If this be true, how can mental impressions reach the fetus, except in a general and not in a special way?

THE TREATMENT OF ACUTE ANEMIA BY INFUSION.¹

BY

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LIKE many other therapeutic procedures, transfusion of blood goes back to the alchemists for its origin. It was first proposed and practised as a rejuvenating measure, and the blood of children was introduced into the veins of the decrepit and infirm. To-day there is a glamour of romanticism about blood transfusion² which would render it popular but for the dreadful accidents which have frequently attended its use.

The recent advances in surgical treatment remove entirely all danger of sepsis, which long deterred operators from this procedure. Transfusion has been proposed for acute traumatic anemia, for hydremia, for pernicious anemia and chlorosis, for malignant infectious diseases and sepsis, and for exhaustion due to prolonged suppuration, phthisis, and old age.

¹ Read before the Chicago Gynecological Society, November 21st, 1890.

² Ewald has recommended the restriction of the term "transfusion of blood" to the classical operation, and would apply the term "infusion" to the injection of watery solutions, while the operation of Ziemssen he would call "injection of blood" (Bluttransfusion, Wasserinfusion, Blutinjection). These terms, however, are not yet adopted by English writers.

In this essay I shall confine my attention to the treatment of acute anemia.

Death from hemorrhage is due to anemia of the brain. Fatal anemia may be either quantitative or qualitative. When the rapid loss of blood in a healthy person exceeds a certain limit, the circulatory mechanism is collapsed, the auricles are imperfectly filled, the ventricles, at the beginning of the systole, almost empty, and a stasis in the capillary system results. Thus the brain is anemic and its functions arrested. If the hemorrhage is stopped a little short of the danger point, the capillaries are filled with lymph from the connective-tissue spaces. The quantity of the lymph circulation is estimated to be about equal to the circulating blood. The intercellular lymph spaces act as a storehouse for the lymph, and it easily and rapidly passes into the ubiquitous capillaries when they are depleted. Indeed, McAllister (page 75) remarks: "It would be genetically more accurate . . . to call blood intravascular lymph in which are contained red corpuscles. Lymph may be regarded as the primary nutrient fluid, and blood as lymph plus a respiratory provision in the form of non-nucleated corpuscles, for the conveyance of oxygen to the tissues."

The cerebral anemia may be due, not to the diminished quantity, but to the perverted quality of the blood. Such instances are to be observed in those diseases in which the function of the hematopoietic apparatus is interfered with.

The quantity of blood in the body has been made the subject of careful study by physiologists. It is estimated variously, but it will be sufficiently accurate for our purpose to assume that it is one-twelfth the weight of the body. Of this mass one-eighth is in the arteries, one-half in the veins, and the remaining three-eighths in the capillaries.

The experiment of Rosenberg¹ would indicate that animals can survive the rapid loss of two-fifths the total quantity of their blood, while the loss of more than two-fifths and less than one-half is usually, and more than one-half absolutely, fatal. In his experimental use of the seven-per-cent salt solution, he was led to think that the injections only temporarily prolonged life in hemorrhages beyond one-half the total quantity

¹ Virch. Arch., Bd. 112, S. 464.

of the blood. This he believed was due to the reduction of the absolute number of corpuscles in a given bulk, resulting in a qualitative anemia.

There is evidently a point, then, beyond which the proportion of corpuscular elements of the blood may not be diminished, as well as a point beyond which its quantity may not be reduced. It is not probable that this point can be determined by counting the corpuscles in progressive anemia, for doubtless a much smaller reduction in the corpuscular elements would result fatally when rapidly induced. If we take Rosenberg's data, and assume that a loss of one-half the blood is ultimately fatal, even if infusion and resuscitation is practised, we should have a reduction of the corpuscular elements to one-half a fatal reduction. As there are ordinarily 5,000,000 corpuscles in a cubic millimetre of blood, a loss of one-half the blood, and a restoration by infusion of its bulk to the full amount, would reduce the number of corpuscles to 2,500,000. This number has been found clinically to be compatible with life and a fair degree of vitality. Patients recover with a presence for months of less than 2,000,000 corpuscles per cubic millimetre. But a reduction of the number of corpuscles beyond 1,500,000 is usually rapidly fatal, and death occurs before the number falls below a million to the cubic millimetre.

We should say, then, that patients do not survive the loss of more than one-half, or some such proportion, of the corpuscular elements, though it is evidently impossible to fix the proportion exactly. Mikulicz has lately (1890) examined the blood of patients who have suffered from hemorrhage, and he concludes that a loss of five per cent of the coloring matter—*i.e.*, five per cent of the corpuscular elements—is restored in about five days, and that a proportionate time is required for more extensive hemorrhages.

It may be assumed that conditions of acute anemia may occur in which the natural dilution of the blood with lymph is sufficient to resuscitate the patient; and it is probable that such an equalization of the lymph and blood pressure is adequate up to the loss of about two-fifths the total quantity of the blood mass. When more than two-fifths and less than one-half the blood is lost to the circulation, dilution of the lymph by transfusion of neutral salt solution is sufficient to

restore the patient to a living equilibrium. But there is a point beyond which the dilution of the blood, either directly or through the dilution of the lymph, will not restore the patient; for, though the increase in the quantity of the intravascular circulation by washing out the lymph with the neutral salt solution meets the mechanical needs of the circulation, it so far reduces the respiratory qualities—the oxygenating properties of the blood—that a qualitative anemia, incompatible with life, persists.

Looking at the loss of blood as the cause of death in a number of obstetrical and surgical cases, as well as in accidents, and as the cause of a protracted convalescence when short of the fatal point, we may well consider the indications for treatment in acute anemia.

One-half the volume of the circulating blood is found in the collapsible veins. It is evident that they will be the first to be emptied in extensive hemorrhage. By placing an anemic patient in the vertical position, with the head down, the blood vessels throughout the three vital parts, the brain, the heart, and the lungs, will be fully distended with the least amount of blood. The first indication, then, in severe acute anemia is to fill the blood vessels by maintaining the most favorable position of the body of the patient. The same result may be more tardily, though more conveniently, attained by temporarily shutting off from the circulation the larger extremities by means of elastic bandages applied firmly from the distal to the proximal extremity of the limb. These two procedures are sometimes termed auto-transfusion.

When the anemia is so excessive that auto-transfusion is inadequate to restore the mechanical necessities of the circulation, the anemia is fatal. But it may temporarily restore the function of the respiration and yet fail to meet the subsequent needs of life. Then there is but one source of relief. This is to be found in the lymph. The rapidity with which the blood pressure is raised is remarkable. It is usually complete at the end of an hour and a half or two hours. Therefore, when the symptoms of a low blood pressure remain after an hour and a half or two hours from the beginning of hemorrhage, and the mechanical necessities of the circulation are unmet, the washing-out of the remaining lymph by means of

a subcutaneous infusion of a neutral salt solution meets the indications of the case.

The amount of salt solution, as well as its concentration, is a matter of some moment. The proportions need not be so exact nor the temperature so well regulated as in infusion directly into a vein, for the tissues act as a sort of ballast and reduce the infusion to a proper concentration and temperature. They retain also any excess in the quantity of the infusion until the blood pressure is reduced again by excretion. Large amounts have been used without danger, but in excessive anemia the quality of the blood may be carried to a fatal point of dilution in raising the intravascular pressure beyond the mechanical necessities of the circulation. Practically this is not likely to happen, for an excess would mean the infusion of more than a gallon.

After the mechanical needs of the circulation are restored, the quality of the blood may be so impaired that a vital equilibrium is not to be attained, and the patient sinks into a state of rapid dissolution. The oxygen-carrying and the nutritive needs of the circulation are not met when the mechanical requirements of the heart are satisfied. The vital power of the heart muscle (and doubtless of every part of the body) is sufficient, as Martin, of Baltimore, has shown, to keep up its function for several hours without any nutrition at all, but it eventually becomes exhausted.

For such severe anemia the infusion of a salt solution and the dilution of the lymph is not enough. The indications have been pointed out again and again; but the dangers of direct transfusion of blood are so many and so formidable that they have deterred the experienced from its practice. The desired result has been sought, then, in the transfusion or injection of defibrinated blood.

Münchmeyer¹ has well stated the advantages of infusion of 0.6-per-cent salt solution. They are too familiar to need rehearsing. Every one will appreciate the accessibility of the solution as compared with that of other materials, such as blood and defibrinated blood. Its composition does not require a high degree of accuracy. Its administration does not require an assistant or an anesthetic. Any simple apparatus

¹ Arch. f. Gyn., 1889, Bd. 34, p. 381.

may be used—*e.g.*, an aspirator syringe or a tube and funnel, and, best of all, the rotary surgical pump.

My own experience in the treatment of acute anemia has been confined to auto-infusion, and on two occasions to the subcutaneous infusion of neutral salt solution.

CASE I.—Through the kindness of Dr. Franklin H. Martin, I was called to attend him in an operation at the Woman's Hospital, and I was requested to be ready to treat dangerous anemia by transfusion. The operation, which was an abdominal hysterectomy, was carefully performed, with the loss of only a moderate amount of blood. It lasted nearly three hours, and at its close the pulse was only barely perceptible at the wrist. Six ounces of a sterilized 0.6-per-cent salt solution were therefore infused under the skin of the back and breast with the following apparatus: First is a bottle holding one gallon, or four litres nearly. In it are to be dissolved just twenty-four grammes, or six drachms, of salt. It is then stopped with cotton and boiled for three hours. In an emergency such a bottle may be filled with boiling water, and the salt added and used immediately. Next is the rotary surgical pump adapted for infusion. The small gum tube is mounted at one end with an aspirator needle; the other end dips into a glass. It may be retained by slipping on a little glass tube. When the glass is filled from the bottle, a few turns fill the tube completely with the solution and empty it of air. The temperature is regulated by allowing a coil of the tube to lie in a basin of water near the patient. This simple apparatus has the advantage of supplying a continuous stream, with no danger of getting out of order and no fear of air. It is easily and rapidly arranged.

The patient died a few hours later, apparently of shock. I do not think enough salt solution was used in this case. The anemia was both quantitative and qualitative, for the patient had suffered repeated hemorrhage from a suppurating fibroid of the uterus.

CASE II. was a rupture of an extra-uterine pregnancy in the seventh month. The woman was a German, 40 years old. This was the first pregnancy. She was first seen by Dr. F. Mattison on the morning of September 23d. At that time she was in collapse and had been vomiting. Distress came

on suddenly in the morning. No pulse at the wrist. Drs. Waxham and Jaggard were called in. A diagnosis of detachment of the normally implanted placenta and intra-uterine hemorrhage was made. It was decided that transfusion was indicated. With the apparatus which I have just presented, the infusion of nearly a gallon of a salt solution, prepared on the spot, was accomplished in about half an hour, greatly to the relief of the patient. The pulse appeared at the wrist, the collapse gave way in reaction, and the patient was out of bed and walking about the room the next morning. She slowly improved for five days, when symptoms of sepsis with emphysema of the uterus came on, and she died under an operation intended to evacuate the contents of the uterus. The post-mortem showed the true condition of the case (to be reported by Dr. Jaggard).

In this case, I believe life was prolonged by the use of the infusion.

W. Hunter¹ has shown that the intraperitoneal injection of blood is followed by transudation *from* the vascular apparatus into the injected foreign blood, and by *diminution* of the quantity of circulating blood with consequent concentration. The number of corpuscles to the cubic millimetre increases from seven to thirty-five per cent in a few hours, and as quickly returns to nearly normal.

It is possible that in this case some of the intensity of the anemia was due to the secondary transudation into the hematoma and the consequent concentration of the blood left in the veins. As Hunter found that the intraperitoneal blood was found in the increased number of corpuscles in the circulation for weeks, the remarkably good effect of this infusion might have been due to the subsequent absorption of the blood in the hematoma.

This incident may point to the combination of 0.6-per cent salt infusion with the subsequent injection of blood. The pressing mechanical indications are met by the infusion, and the absorption of the injected blood restores the vital qualitative equilibrium of the circulation. From reading the literature on this subject, I would propose the following aphorisms:

¹ Intraperitoneal Blood Transfusion," *Journal of Anatomy*, vol. xxi., 1887, and *British Medical Journal*, 1890.

1. In dangerous acute anemia auto-transfusion should first be practised.

2. When the lymph spaces are drained, as is indicated by the sunken and drawn appearance of the face, or by the time auto-transfusion has been tried and the symptoms of anemia persist, infusion of a large amount of 0.6-per-cent salt solution should be practised. The necessary apparatus is so simple and the danger so remote that this measure should not be neglected.

3. The immediate intravascular injection of salt solution or blood for acute anemia cannot be countenanced in the present state of our experience and knowledge.

4. The value of secondary subcutaneous or intraperitoneal injection of blood in cases of so extensive hemorrhage that a qualitative anemia is present after the mechanical needs of the circulation are satisfied, is still conjecture, but certainly such injection of blood should not be practised until reaction is well restored.

5. The immediate subcutaneous injection of blood diluted with a large amount of salt solution is not contra-indicated, but its value is still problematical.

6. The rotary surgical pump is the most perfect and manageable apparatus yet proposed for subcutaneous infusions and injections of large amounts, and for direct intravascular transfusion.

AN INFREQUENT FORM OF PUERPERAL INFECTION.¹

BY

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IN directing your attention this evening to a rather infrequent form of puerperal infection, I have done so with the object of securing a general discussion of the matter, especially in regard to the question, Where is the point of infection? the answer to which will necessarily suggest a form of treatment which may shorten the duration of the disease.

¹ Read before the New York Obstetrical Society, January 6th, 1891.

In over six hundred deliveries I have only met with two such cases, and I saw a third in the Maternity Hospital, Blackwell's Island, the case occurring in Dr. Coe's service during the month of October. The latter seemed, in my mind, to offer a clue to the obscurity of the situation, and I shall now proceed to explain more in detail the nature of the cases.

Like almost all cases of a septic nature, the trouble manifests itself on the second or third day after delivery by pretty well marked symptoms. There is severe headache, the temperature is high, pulse accelerated, some prostration, tongue little coated and moist. The chill, if present, is slight, and there is but little tenderness of the abdomen. Skin is dry, and there is no tendency to sweating during the whole course of the disease. The lochia remain absolutely unchanged, except for some diminution in the amount, due to the hyperpyrexia. The general condition of the puerpera is good, and, were it not for the thermometric record and increased pulse rate, one might at first pass the case by without giving it serious consideration.

Proceeding to the bimanual examination, one is further nonplussed by being unable to distinguish any appreciable lesion, save a more or less extensive laceration of the cervix. Should the perineum have been torn, careful examination will fail to show any local manifestations of an inflammatory process. The examination of the other organs of the body is entirely negative.

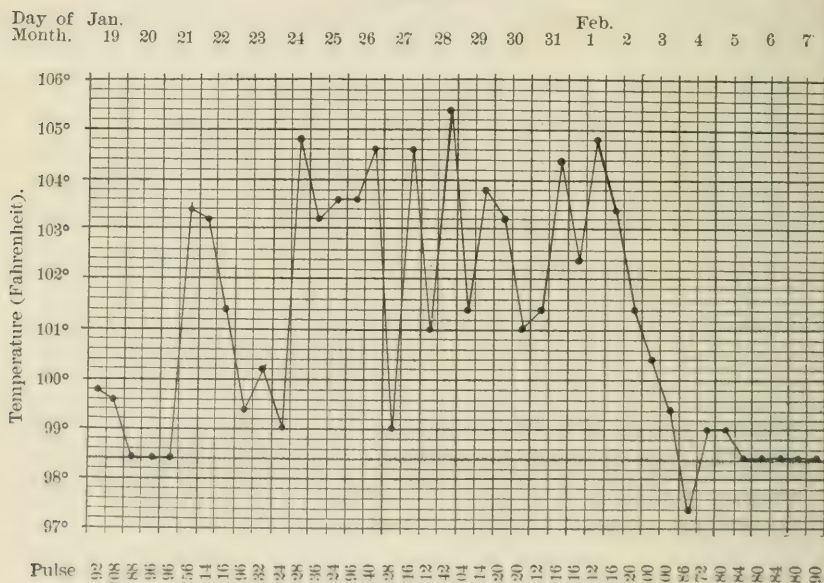
The subsequent history of the patients during their puerperium is one which causes the physician more anxiety than the patient, for the latter always expresses herself as feeling very well, save for intermittent severe headaches. To the former, however, her condition is anything but pleasing, since both temperature and pulse remain elevated, and her attendant is in continual dread lest the disease assume a more serious character.

That such is the case the temperature charts of the three cases which I present to you will, I think, prove. At the same time I will give you a brief abstract of the histories:

CASE I.—Ella R., United States, æt. 18; Ipara. Confined January 19th, 1887; vertex; normal delivery. 21st: Headache; temperature 103.4° , pulse 156. No chill, no change in

lochia. Uterus was well contracted; very little tenderness of abdomen. No vaginal examination made. 24th: Slight chill, headache. Temperature 104.8° , pulse 128. Quinine, gr. x. Vaginal examination. Little tenderness of left broad ligament. Uterus hard, not tender; extensive laceration of cervix. Examination of other organs negative. Intra-uterine douche given. 25th: Warburg's Tincture, 3 i. q. 6 h. Douche, b. d. 27th: Chill; severe headache, which persisted intermit-

ELLA R.

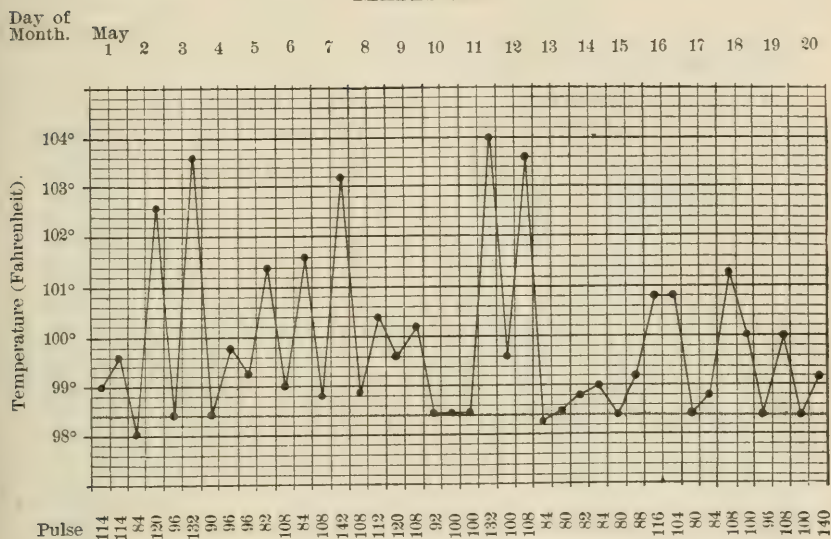


tently for several days, during which time she had several loose movements daily. 4th: Repeated vaginal examinations have failed to distinguish any other lesion. Patient was seen by several of the attending physicians, who regarded it as an obscure case of septic infection.

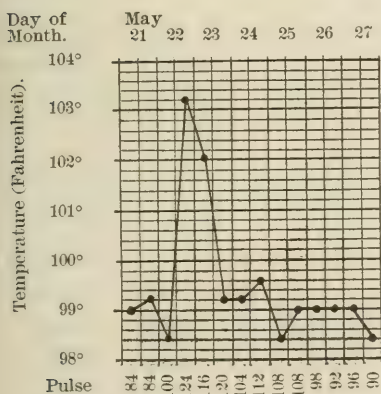
CASE II.—Mabel M., æt. 19, United States; Ipara. Confined April 30th, 1887, 5:30 p.m.; vertex; normal labor. 2d: Temperature 102.6° , pulse 120. Patient complains of severe headache. Uterus little tender, cervix lacerated. Lochia scanty, character unchanged. 3d: Passed some clots. Intra-uterine douche given. Breasts full, little tender, not inflamed.

Quinine, gr. v. q. 6 h. Douche, b. d. Subsequent history

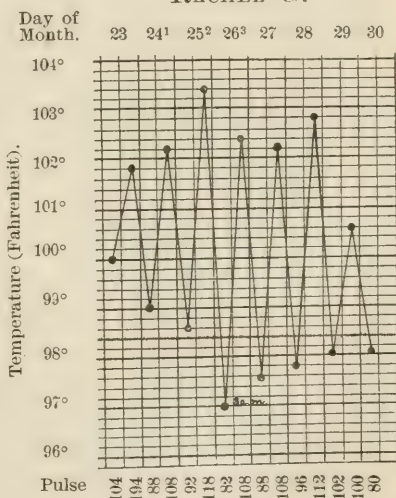
MABEL M.



MABEL M. (Continued).



RACHEL G.



negative, save for headaches and rise of temperature. Per vaginam no other lesions presented themselves.

¹ Antifebrin, gr. v., in afternoon. ² Phenacetine, gr. x. ³ Antifebrin, gr. v.

CASE III.—In Dr. Coe's service. Rachel G., æt. 21, United States; Ipara. Confined October 22d; vertex; normal delivery; placenta expressed, membranes intact. Perineum torn and repaired at once. 23d: Pain in abdomen. Temperature 101.4° , pulse 104. Yesterday and to-day little abdominal tenderness. Poultices. 24th: Temperature 102.2° , pulse 108. Ice coil. 25th: Temperature 103.2° , pulse 118. Shreds of membrane in douche. Phenacetine, gr. x. Intra-uterine douche. Temperature persisted all night over 102° . 26th: morning, temperature subnormal; evening, 102.4° . Large clot and some membrane. 27th: Membrane. Intra-uterine douche. 29th: Large piece of organized tissue in vaginal douche. In the afternoon, large piece of the posterior lip of the cervix was found wanting. Internal os closed. Uterus well contracted, no signs of any parametric trouble. Cervix touched with carbolic acid. 30th: From this day temperature remained down. At no time was there any fetor to the lochia. Application made to cervix daily. Perineum has united well.

From the history of the last case every one of us would unhesitatingly pronounce it a septic one; can we do the same with the other two? By a process of exclusion it seems to me that we can; for one is justified at the present time in pronouncing such cases as these, with the persistent elevation of temperature, cases of infection, if no other assignable cause can be found.

A thorough examination of them both by two or more of the attending physicians of the hospital excluded any cerebral or thoracic disease: the persistence of the temperature, as well as the absence of any exciting cause, excluded any fever due to nervous origin; the breasts were not the seat of the trouble; the patients were neither of them syphilitic; the spleen was not enlarged, and quinine had no controlling effect on the temperature; there was nothing wrong with the kidneys, as shown by repeated urinary examinations. Only one case, the first one, with its persistent high temperature and at one time slight diarrhea, showed any resemblance to typhoid fever. Her previous history (the patient having been an inmate of the hospital for several weeks, where there were no cases of typhoid), the absence of spots, the normal size of the

spleen, the character of the tongue, and the generally good condition of the puerpera during the continuance of the fever, were all against this diagnosis.

We are thus narrowed down to some form of septic trouble, and the first question which arises is, Where did the infection take place? I know that it is a hard matter to locate the spot of infection at any one point of the parturient canal, and next to impossible in a given case to say from the symptoms that such and such a place is the source of the trouble; yet bimanual examination and ocular inspection, along with the history, will enable us to understand the case more thoroughly.

To proceed, then, to the cases under consideration. Was the uterus at fault? Probably not, since there was no change in the lochia; no signs of a metritis, as shown by absence of tenderness and the negative effect on the patient's temperature after intra-uterine douches were used; and, lastly, by the practically normal involution of this organ. Were the lacerations of the vagina the origin of the trouble? Here again, no; for in one case the perineum united well, and in all there were no signs of any inflammation, such as edema and tenderness and the presence of ulcers, which, according to Winckel, are found in more than two-thirds of all cases.

The probable explanation, in my mind, is that the seat of the disease was to be found in the lacerations of the cervix; that an inflammatory process there took place, the absorption from which was sufficient to produce the above symptoms, but was not enough to light up that more violent train of symptoms met with when the amount of the septic poison absorbed is greater or its character more virulent. My reasons for which belief are:

1. Because the predominant lesion was an extensive injury to the cervix, the lymphatics of which are much less numerous than those of the uterus and vagina, consequently the site was unfavorable for a rapid or large absorption of septic material.

2. Because of the non-appearance of any peri-uterine lesions, which are almost always present whenever, together with such a severe general systemic disturbance, the uterus is the *fons et origo mali*.

3. Because treatment was of no avail until, in Case III., applications were made directly to the ulcerated spot. This case more particularly strengthens this theory, since the presence of membranes, etc., in the lochia showed that the uterine cavity was not entirely cleansed of its secundines and was in a fit condition to set up a severe form of puerperal fever. Still intra-uterine douches had no effect, and the lochia remained absolutely free from any changes due to decomposition.

Finally, because in the last case a large piece of the posterior lip of the cervix sloughed off, which process did not interfere to any appreciable degree with the normal involution of the uterus, or prevent the perineum from uniting primarily, and the patient manifested unmistakable signs of a septic process going on in her system at the same time.

If the answer to the question, Where is the point of infection? be correct, our aim in treatment should be to make applications directly to the lacerated cervix. According to the conditions found by ocular examination in the Sims' position, it would be advisable to make some strong local application, or curette the parts first and then apply some caustic.

It is in just such cases as have been described that Dame Nature deserves the greater part of the credit for the cure, the physician too often hesitating to interfere on the old principle of meddling midwifery.

Were the case one of distinct intra-uterine infection, the treatment would be very active; or, again, were the point of infection around the external genitals or just within the vagina, some form of topical application would be made in order to seal up the absorbent channels. Why should we not do the same in these more obscure cases when the cervix is presumably at fault?

In the mind of the writer there is no valid reason for not doing so, since one can be confident of not introducing any more bacteria on his hands or instruments by due regard to cleanliness, and it is his belief that such a procedure would materially shorten the duration of the disease in many cases where temporizing means are now the order of the day.

OBESITY IN ITS RELATION TO MENSTRUATION AND CONCEPTION.¹

BY

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ALL men in active practice have doubtless noticed the great frequency of obesity in sterile women. Most of these obese and sterile women will be found suffering from amenorrhea, scanty or painful menstruation, and in numerous cases atrophy of the uterus. How often do we see a fat and childless woman, how frequently an obese man without offspring, and how very many times do we observe that the man and wife afflicted with corpulenta morbosa live through a long married life without descendants!

It is sometimes difficult to mark where the condition of embonpoint stops and that of obesity commences. Physiologists tell us that in males the fat should constitute the one-twentieth part and in women the one-sixteenth part of bodily weight. As soon as the fat passes a certain limit in woman it not only ceases to make beautiful—for only the Orientals find a fat woman beautiful—but has a bad influence on the general organism. It produces various troubles in different organs, limits freedom of movement, disturbs digestion, restricts respiration, hinders blood formation, and injures the cerebral functions.

It is well known that women are much more subject to obesity than men. Bouchard's cases were sixty-two women and twenty-four men, and most authorities report more women than men. The softness of the tissues and the sedentary habits of women tend toward obesity.

That undue accumulation of fat retards or prevents fruitfulness is an old saying, the truth of which was first noticed

¹ Read before the Obstetrical Society of Cincinnati, October 9th, 1890.

in female animals, also in plants. Hippocrates observed the sterility as well as amenorrhea among the Scythian women. He says: "The enormous fatness of the women is responsible for their frequent sterility, and their slaves who are lean conceive as soon as they have connection with men." This sterility in obese women may not only be due to the amenorrhea, but also to the chronic catarrh of the uterine mucous membrane, or to the displacements of the uterus sometimes resulting from the great deposits of fat; it is also doubtless in some cases due to the inapproachableness of some very fat women on account of the enormous size of the external genitals.

Obesity to the extent of polysarcia has a great influence on generation; it prevents the development of the male generative organs. Atrophy of the penis and testicles is often observed. In men of middle life these organs are sometimes found as those of a child of 8, erection and emission having never occurred. If the polysarcia occurs after adult age it diminishes greatly the sexual desires, which are only reproduced on the emaciation of the patient. In women the accumulation of fat in the abdomen produces amenorrhea and dysmenorrhea, possibly by compression which prevents the utero-ovarian function; possibly, in the absence of nervous excitement, ovulation does not occur. This obesity is often followed by a suppression of menstruation for a few months, an increase in the size of the abdomen, and often leads to an erroneous idea of conception. Diminution of fat leads these organs to return to their natural state, the menses become regular, and as the functions of generation resume their natural course conception becomes possible.

Given an obese woman, we will generally find the prospects for offspring will depend more upon the menses than upon the amount of fat, amenorrheic fat being usually sterile. We notice that the luxurious habits and overfeeding of the wealthy diminish fertility, while the life of the poorer classes, which is not conducive to obesity, tends to large families. Thinness only results in sterility when due to starvation or chronic diseases. The injurious influence of excessive flesh on women, with reference to childbearing, is universally ad-

mitted, and is corroborated by experience with plants and the lower animals.

In obese women the amount of blood lost in menstruation is almost always less than normal, and it is often only bloody serum containing a few epithelial cells. The continuation of the flow may be for a few hours or a single day, and seldom or never does it last three days. It may cease for a short time and then resume. Pain is a very constant symptom, beginning a few hours or days before and lasting until it ceases. This pain is located in the sacral region in the majority of cases. There is pain and fulness in the head, and in some instances a bearing-down or expulsive pain. Vicarious menstruation presents in the form of nose-bleeding and bloody diarrhea. In rare instances obesity is found accompanied by menorrhagia and metrorrhagia instead of amenorrhea. This is thought to occur when the collection of fat in the abdominal region is excessive or the condition of blood is a low form of anemia. The accumulation of fat in the abdominal cavity through compression restricts the return circulation and causes a stasis in the walls of the arteries, which soon leads to an overflow through the capillary walls of the mucous membrane. This bleeding is also the cause of very obese women aborting when they become pregnant.

The pathological anatomy of this subject is unfortunately not well understood. Post-mortem examinations are few and indefinite. Worthington records a post-mortem made on a woman who weighed almost four hundred pounds, but the uterus was not examined. The other abdominal viscera were full of fat. Few cases terminate fatally. In most of them there is a heart weakness, particularly noticeable after exertion, but organic trouble is absent. The heart, as an involuntary muscle, is subject to fatty infiltration, and it is quite probable, to say the least, that the uterus is affected in the same way. Frommel has observed atrophy of the uterus after normal childbed in twenty-eight cases out of three thousand. This was accompanied by severe abdominal pain and atrophy of the tissues of the body and neck of the uterus and of the vagina. The tissues were very soft, and readily permitted the sound to penetrate them. He believes that in

many cases the uterus undergoes such excessive changes in consequence of lactation that subsequent restoration to a normal condition does not occur. The demands of frequent pregnancies in quick succession produce permanent atrophy.

It is possible for displacements to result from obesity and thus cause sterility. We all meet with numerous instances where a deposit of fat in the abdominal walls is mistaken for pregnancy when accompanied by amenorrhea.

Kisch has observed two hundred and eight cases where obesity was associated with amenorrhea or oligomenorrhea either as a cause or effect; in many of them he could find no other cause for the existing sterility than the obesity.

The great frequency of obesity and disorder of menstruation would lead us to believe that sterility will be the rule whether the patients have previously borne children or not. Pregnancy occurring, the impaired nutrition of the uterus will operate unfavorably upon its continuance to term. Bunsen has shown that when the gestation is completed the offspring will be deficient in vitality.

Philbert quotes five cases in which a loss of weight, brought about by active hydropathic and dietetic treatment, resulted in pregnancy. The ages of the patients varied from 21 to 27 years.

Obesity, in some women as well as men, has the effect of abolishing the sexual appetite; indeed, this is the effect on most persons suffering from adiposis, also a disinclination to perform the ordinary duties of the day, and impairment of the physical and mental powers generally. Constipation is a frequent trouble.

With the exception of those cases following frequent parturition and lactation, there is nothing peculiar in the etiology and process of obesity in women other than might occur in men. The free or immoderate use of starches, fats, and sugars, an inordinate desire for confectionery, luxurious habits, sluggish disposition, an inactive life, excessive sexual indulgence, and a hereditary predisposition, lead to obesity.

Amenorrhea and scanty menstruation found in obese women probably have an origin in the anemic condition of the blood which is almost invariably found in persons suffering

from long-standing obesity. The menstrual blood in fat women is usually pale, scant, watery, poor in fibrin. These facts have long been known, as Hippocrates said of the Scythians: "With their women the menstrual flow is irregular, small in amount, and at long intervals. This comes from the great amount of fat which they possess."

Obese women may be divided into two classes: First, those who have borne and nursed several children in a brief period of time; they prematurely reach the limit of their reproductive capacity, and the phenomena of the climacteric supervene. Second, young women who become obese from whatever cause, and who, as a result, have amenorrhea or scanty menstruation and often dysmenorrhea, though menstruation was previously devoid of pain.

Hippocrates also observed that sterility followed obesity. He believed that the os uteri was closed by fat and would not admit the semen. From the scantiness of menstruation he inferred there was an absence of a sufficient degree of intra-uterine moisture to render conception possible. It appears that more attention was given this subject by the ancients than by moderns.

If we have a woman under 30 who bears and suckles four, five, or six children in rapid succession, we usually find that she prematurely reaches the limit of her reproductive powers. She takes on flesh, sterility ensues, menstruation becomes scant, sometimes disappearing altogether. From her obesity she will be subject to amenorrhea or oligomenorrhea, while sterility will be the rule.

Miss Conley, the great American fat woman, who died in 1883 from rolling over on her face and being unable to roll back again, was the largest of her sex and weighed 497 pounds.

The obese woman, when she becomes *enceinte*, is not at all assured that she can bring her child to term, for abortions in these cases are very frequent. Stoltz attributes five consecutive abortions in the same woman to this cause, and Goubert cites the case of a very fleshy woman who reached her eighth consecutive abortion. With such cases the nutrition takes an abnormal direction, and the nutritive aliments destined to

support the product of conception are directed to other points. .

We may consider that the presence of obesity in woman will lead to amenorrhea or oligomenorrhea, with possibly dysmenorrhea, atrophy of the uterus, and sterility. Should pregnancy occur the condition of the woman will operate unfavorably upon its continuance to term. Should it go on to term it is probable the child will be deficient in vitality—in fact, the mountain will have labored and brought forth a mouse. It is not improbable, if we succeed in relieving the patient of her obesity, we will at the same time cure her of sterility.

The prognosis in those cases in which the climacteric has followed great fruitfulness is exceedingly bad. The sterility is permanent, and it is doubtful whether any treatment would change it. Nature is exhausted. In other cases the prognosis is reasonably good if we can have our instructions carried out.

A brief citation of the following cases may be of interest.

Among prostitutes I remember half a dozen instances where obesity was present, there was atrophy of the uterus, absence of menstruation for two or three months at a time, or, if present, it lasted only one day and was very scant. Two of these suffered severely at the menstrual period from bearing-down pains, backache, and headache. Four of them had never borne children; two had several miscarriages in rapid succession early in their career. Their ages ranged from 25 to 40 years.

Mrs. E., age 27, married nine years and never pregnant, began, soon after marriage, to take on flesh. She had been married five years when she first came under my observation. Examination showed an atrophied uterus. The menses were slightly diminished in amount, but not remarkably so. She found the regimen requisite to reduce corpulence too rigid, and refused to continue it. She is still sterile and will probably remain so the rest of her life.

Mrs. K., æt. 32, married eight years, first came under my observation four years ago. She gave birth to one child before she was married a year, and never became again pregnant,

though very desirous of so doing. On examination she was found to have a very small uterus, and the history of the case led me to believe that she had suffered superinvolution. She then began to increase in flesh, which went forward steadily until she now weighs 210 pounds. She is dyspeptic, anemic, neuralgic, and amenorrhœic. Her flesh is a burden and her life miserable. She is a very fickle and impatient woman, utterly incapable of carrying out directions for a week even, and, of course, has not benefited from advice. In this trouble as in no other the earnest co-operation of the patient is essential to success. The husband of this woman is a good mate for her, being very corpulent.

Mrs. S., age 44, married twenty years, had been told by two doctors that she was pregnant. This being the first time for eighteen years, she thought she was renewing her youth. The nine months rolled by and her expectations were not realized. I was called, and on examination found a 200-pound patient. Uterus palpated with great difficulty owing to obesity, but found to be atrophied, and no evidences of pregnancy except absence of menstruation and enlarged abdomen. Obesity explained both conditions, as did also the time of life and the indigestion of food and formation of gas in the abdomen.

Mrs. H., æt. 23, married five years, very anxious for a child, thought herself pregnant, but had to give up her hope, as time proved her mistake. She was fleshy from childhood, and increased rapidly in weight after marriage. As she became more obese her menses, though regular, became less in amount, and examination discovered an infantile uterus. Patient did not appear anemic.

Treatment requires, of course, rigid diet. Hydrocarbons must be eliminated to give place to albuminoids. Alcohol must be interdicted. Exercise, household duties, gymnastics, or massage cannot be neglected. Electricity, both in the form of general faradization and the intra-uterine use of the faradic current, is of value. It improves not only the muscular tone but the entire pelvic circulation. Astringents and stimulants to the interior of the uterus, also moderate dilatation, are useful, but the danger of exciting inflammation should control too free use of these means. The condition

of the heart should be attended to, and laxatives systematically used. Sea-baths and hydropathy generally, with the avoidance of warm baths, are recommended. Arsenic is highly approved by Dr. Whittaker. Glauber salts, mineral waters, iron, cold baths, are all beneficial, providing there is no disease which would contra-indicate their use.

In cases of amenorrhœic fat women, where the amenorrhœa is due to an anemic condition of the blood, it is useless to try to bring on menstruation by local means, such as warm uterine douches, warm foot and hip baths, etc. Such means, if they do anything, do harm. It must not be the sole aim to force menstruation, but to assist regular and healthy ovulation, which can be done by conquering anemia and improving the general health.

Kisch reports the cure of sterility and amenorrhœa by relief of obesity in a number of young women from 20 to 30 by means of the spring and bath cure at Marienbad. While laxatives do good, strong purgation is condemned, as most obese women are anemic and the purgatives would make them more so. The reduction of fat by purgation is only temporary.

Massage of the abdomen and of the internal genital organs of the woman is one of the best modes of treatment.

M. Levin, before the Société de Biologie, has recently described obesity as a nervous disorder, and advised its relief by the avoidance of mental and physical fatigue, and a diet of soups, eggs, rice, and potatoes.

BIBLIOGRAPHY.

- | | |
|--|--|
| KISCH, Die Fettleibigkeit der Frauen in ihren Zusammenhang mit den Krankheiten der Sexual Organen. Prague, 1873. | Médecine et de Chirurgie pratique, xxiv., 226. |
| KISCH, Real-Encyclopädie der Gesamtenheilkunde, v., 247. | LEVIN, New York Medical Record, xxxiii., 1888, p. 75. |
| PERCY and LAURENT, Dictionnaire des Sciences Médicales, xxxvii., 1. | CURRIER, New York Medical Record, xxxiii., 1888, 163. Medical News, Philadelphia, lii., 1888, 172. Tr. N. Y. State Med. Society, 1888, 98. |
| D'HEILLY, Nouveau Dictionnaire de | SAINT-GERMAIN, British Medical |

- Journal, 1881, 11, 1023. *L'Union Médicale*, November 29th, 1881, et seq., *Les Malformations et leur Thérapeutique*.
- WORTHINGTON, *De l'Obésité*. Paris, 1875.
- HIPPOCRATES, French translation E. Littré, ii., 1875.
- FROMMEL, *Zeitschrift fuer Geburtshülfe und Gynäkologie*, 1882, vii., 307.
- GRIGG, *Obstetrical Journal Great Britain and Ireland*, 1875, 11, 699.
- GLAIS, Paris Thesis, 1875.
- DE PAUL, *Worthington's Thesis*. Paris, 1875.
- BUNSEN, *Neue Zeitschrift fuer Geburtshülfe*, vi., 1, 1841.
- ROUBAUD, *Traité de l'Impuissance*, etc. Paris, 1872.
- AUVARD, *Gazette des Hôpitaux*, Paris, 1888, lxi., 1245.
- FOURNEL, *Gazette des Hôpitaux*, Paris, 1889, lxii., 183, 186, also February 16th, 1890. *Annual*, etc., II., 1890, I., 1.
- DOLÉRIS, *Archiv de Tocologie*, 1882.
- BRONDEL, *Bulletin de Thérapeutique*, 1886.
- QUETELET, *Physique Social*. Brussels, 1869.
- GOUBERT, *Aetiologie des Avortements à Répétition*. Thèse de Paris, 1878.
- LIVIAIRE, *Note Pratique sur l'Avortement*. 1877.
- PHILBERT, *London Medical Recorder*. *Obstetric Gazette*, xii., 461, 1889. *Annual of the Universal Medical Sciences*, II., 1890, I., 1.
- PARVIN, *Annual of the Universal Medical Sciences*, II., 1890, I., 1.
- EDITORIAL, *Gazette des Hôpitaux*; also, *Times and Register*, November 23d, 1889, 716.

A NEW METHOD OF TREATING THE INCISION IN PATIENTS SUBJECTED TO LAPARATOMY.¹

BY

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Mrs. B., Russian, æt. 29, married and sterile. I will omit the long history of the various forms of medical treatment through which this patient went, and will at once come to the surgical treatment of the case. To enter the abdomen I was compelled to cut through at least four inches of fat. I found

¹ Read before the New York Obstetrical Society, December 16th, 1890.

the anatomical feature peculiar to Russians—namely, a very long omentum, which in this case reached to the space between the bladder and the uterus. It was attached firmly along the median line to the anterior abdominal wall. I entered the abdomen to the left of this line of adhesion. A single broad-ligament cyst of the left side and ovarian apoplexy were removed. The right side gave me a multilocular broad-ligament cyst. There were a great many adhesions and a considerable degree of bleeding. The tumors were of such size as to completely fill the true pelvis and rigidly fix the uterus. The fimbriæ of each side were adherent to the corresponding ovary, but there were no evidences of tubal disease. As usual, the contents of the cysts were clear. The abdominal cavity was washed out with boracic acid solution. The oozing from the torn adhesions was sufficient to require a drainage tube. The peritoneal edges were brought together with Czerny-Lembert sutures of catgut, and the muscular and fascial lines with sutures of silk. The enormously deep and gaping fat surfaces were left open and packed with bichloride gauze after being dusted with iodoform. The first dressing was made on the fourth day, and the silk sutures removed on the eighth. The drainage tube was removed at the first dressing, being replaced by a very small and short glass tube which projected but a little below the muscles. In removing the silk sutures I found them all in the bottom of the wound, their loops being loose, showing to what an extent silk will cut through and stretch in the tissues.

I have brought this case to your notice for the purpose of introducing a novel method of treating the wound. The surface wound in this woman was four inches deep and eight long. It closed by granulation entirely in six weeks. Between the external cicatrix and the line of union between the muscles there is now no fat, but one scar is adherent to and attached to the other. Rupture and ventral hernia are impossible. The track of the drainage tube, instead of forming a point of weakness in the cicatrix, is buried entirely beneath it. The wearing of an abdominal supporter is here unnecessary. I have employed this method of treating the incision in four other cases which required drainage tubes, one of them

being the case of hysterectomy which I reported to the Society January 7th. With it mural abscesses are impossible. And I shall hereafter use it in all cases where there is any degree of fat in the parietes, whether I think I could get primary union or not, for I believe that the union which we get between fat surfaces is at best loose and easily broken. It is between the peritoneal and muscular and fascial surfaces that we get our strongest union. To include peritoneum, muscle, fascia, fat, and skin in one suture is a mistake, inasmuch as an accurate coaptation of the several layers is impossible. You would think that leaving the wound to heal by granulation would necessitate keeping the patient confined to bed much longer than had you closed the wound entirely. But such is the case only when the patient is very fat. I would recommend this procedure always in drainage-tube cases and in cases having very thick abdominal parietes. In the one it gives a closing-in of the drainage-tube track ; in the other, mural abscesses are impossible ; and in all cases the abdominal scar is stronger.

I report this case two years after the operation ; and to-day there is no sign of ventral hernia, although she wears no form of pad or supporter.

TREATMENT OF MEMBRANOUS DYSMENORRHEA BY BIPOLAR GALVANIZATION.¹

BY

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(With two woodcuts.)

It was very gratifying to me, after I had gotten together the items for this paper, to read the following : " Just at present the most fashionable treatment for dysmenorrhea due to anteflexion is divulsion of the internal os. The chief exponents of this measure are Prof. Goodell, of Philadelphia, and

¹ Read before the New York Obstetrical Society, December 16th, 1890.

Dr. W. Gill Wylie, of New York. Not a few, and especially Dr. Emmet, have denounced this practice as harsh and unscientific, having no reasonable justification from a pathological standpoint. When we see two surgeons of such confessed skill and experience as Dr. Goodell and Dr. Emmet differing so widely as these gentlemen do with regard to divulsion, we are led to inquire if there is not some middle ground which is more tenable than that occupied by either of them." While I may not take the middle ground, I hope to take a central one, and I know I have your sympathy when I suggest the mode of treatment, in the face of what the paragraph goes on to state, namely, "that there is no unity regarding uterine pathology." Notwithstanding this, I wish to present in this paper not so much a discussion on pathology or the generally-laid-down plans of treatment in the condition called membranous dysmenorrhea, as to lay before you a few facts from personal experiment and experience in the treatment of this, the most trying and perplexing lesion that the physician is called upon to treat.

I shall consider dysmenorrhea—and particularly the membranous form—as a symptom, depending on a central lesion, with marked peripheral changes, and shall formulate my plan of treatment accordingly. We all know the difficulty of accurately drawing the line between the normal and abnormal conditions at their commencement, and of finding the point where the physiological ceases and the pathological begins.

The normal function of all organs is maintained by a healthy co-ordination of the three divisions of the nervous system—viz., the motor, the sensory, and the sympathetic. The integrity of such co-ordination may be disturbed by peripheral or central influences, or by lesions of the intercommunicating tissue. The wonderful processes of waste and repair that are constantly going on in the body must be dependent for their proper control on a healthy nervous system and on a normal supply of blood. If the normal influence of the nervous system be perverted at any point, the due circulation of blood is interfered with. The functions of the reproductive organs may be said to be compound in this respect, that they are partly voluntary and partly involuntary—some depend entirely on central influence, while others are

exclusively reflex. Hence we can readily see how the function of any organ may be deranged by peripheral, central, or intermediate influences. I know, at the same time, that if we are inclined to look for uniformity in disease, we shall be sadly disappointed. Yet it does seem that nature must act according to fixed principles.

First, let us consider the sympathetic plexus of nerves, and, from a knowledge of its physiology, understand its dominant influence over those parts of the pelvic cavity and the organs therein that are under its control.

“Claude Bernard discovered that division of the sympathetic nerves in the neck is followed by enlargement of the blood vessels on the corresponding side of the head. Almost immediately after the section of the nerve an increased vascularity becomes visible in the conjunctiva, the mucous membrane of the nostril, lip, tongue, cheek, and in all parts of the skin affected. The first result noticed in these experiments was a local increase of temperature. Hardly a year had passed when a second observation was made almost simultaneously by Brown-Séquard in Philadelphia, Bernard in Paris, Waller in London—namely, that the condition of the circulation, on that side of the head where the sympathetic had been divided, may be regulated at will by experimental means. Suppose that increased vascularity has been produced by division of the sympathetic in the neck: if the stimulation of galvanism be now applied to the divided nerve above its point of section, all the previous results of the operation disappear, the blood vessels contract, the volume of the circulation diminishes, the local temperature is reduced, and the parts resume their natural color, or become even more pallid than before. Suspend galvanism, and the former conditions return with all the accompanying phenomena of vascularity, temperature, and redness. The circulation in a part may be in this way alternately increased or diminished for many succeeding repetitions of the experiment” (Dalton).

These phenomena are not confined to the upper portion of the sympathetic, but may be produced at any point along its track. When this nerve is divided at a point just behind and a little below the stomach, an increased vascularity, increased temperature, and congestion (as marked the experi-

ment of Bernard in the upper part) is induced which extends over the tissues to the bowel, being most marked over the ovaries, uterus, bladder, and rectum. When an electrode is placed over the divided nerve trunk above the section, and the other electrode against the leg, perineum, or in the vagina, and the galvanic current is turned on, the congestion and vascularity decrease and the temperature is reduced, so that the parts return to nearly a normal appearance. When the current is stopped the tissues return to their abnormal condition.

We have, closely connected with this nervous influence, what Prof. J. C. Dalton called "action of arrest"—that is, "an influence which passes through a nerve from its origin to a muscle, and by which the muscular contraction is suspended. All the sphincter muscles, though habitually in a state of involuntary contraction, are suddenly relaxed at certain periods by an influence coming from within. The blood vessels generally receive both kinds of nervous impression, and by the varying preponderance of one or the other they are alternately made to contract or dilate, with all the accompanying changes of local circulation. In this way can be explained the mechanism of temporary physiological congestion, like the growth of the uterus and mammary glands during pregnancy, as well as morbid disturbances of the circulation in disease."

I have obtained a few more facts from experimental physiology on the peculiar manifestations of electrical stimulation of the uterus in the lower animals, following somewhat the line of experiment suggested by M. Dembo and presented to the French Academy of Sciences. I found that in the rabbit, when direct faradization of the uterus or one of its cornua was made, a contraction was excited at the point to which it was applied which extended for a distance of about three-quarters of an inch, but never reached the other cornu. If one electrode is applied to each cornu, contraction occurs only in the neighborhood of the electrodes, but not in the tissues between them. Very different, however, is the effect when the application is made to the vagina.

If both electrodes are applied to the vesical wall of the vagina, a contraction is produced in both parts of the uterus, vermicular in character, passing from below upward. If the application be made to the lateral portion of the vaginal wall,

a contraction is produced only in the corresponding cornu. Local contractions on the corresponding side can be produced by placing the electrode on certain points in the broad ligament, but the contraction never extends to the whole uterus. It is impossible to produce contraction of the non-gravid uterus by faradization applied through the abdominal wall.

The excitability of the uterus of the rabbit was found to vary according to the age of the animal and according to whether it had borne young or not. Faradization of the vaginal walls by the bipolar application (that is, the two poles on one electrode, so insulated that the current passes from one pole to the other at the point of application) caused pallor of the mucous membrane and also of the whole uterus, due apparently to contraction of the substance of the uterus. Frankenhauser found that stimulation of the aortic plexus caused a marked contraction of both cornua, and it is highly probable that an analogous nervous plexus is situated in the vesical wall of the vagina.

From a careful study of the results of these experiments, it seems plain to me that the condition of membranous dysmenorrhea should be treated in some way suggested by the distribution and physiological influence of the sympathetic nerve; noting, as a general feature, that in all the cases that have come under my observation there has been a nervous temperament, some hereditary nervous tendency—neuralgia, local or remote—and a chain of symptoms that impressed me as belonging to a nervous class.

I do not intend to discuss or present any personal ideas of the pathology, but shall repeat what has been already stated by various pathologists in regard to the membrane that is thrown off from the uterus in membranous dysmenorrhea. Thomas states: It was formerly believed that a layer of plastic lymph was, as a result of endometritis, thrown over the uterine wall, which, becoming organized, constituted the cast of the uterus. It is now regarded as an exfoliation of the entire mucous membrane of the uterus, caused by congestion and irritation to the uterus. Scanzoni has attributed the cause of the exfoliation to a considerable hyperemia of the walls of the uterus, which is followed by an excess in the development of the mucous membrane.

Simpson believes it to be an exaggeration of a normal condition, or an exalted degree of physiological action. Klob regards it as a result of inflammation. By some it is looked upon as a deciduous formation, excited by conception.

Among the most prominent *causes* given by authors are: Flexions, anti and retro; versions, anti and retro; too large an os; too small an os; constricted os; constricted canal; constricted internal os; congestion of mucous membrane; hypertrophy of mucous membrane; hypertrophy of uterus; metrorrhagia; all the changes in the ovary, as inflammation; prolapsus; and, summing up, the principal factor in the whole disturbance is the ovary.

In the *treatment* of this stubborn affection there have been recommended internal applications of nitric acid, carbolic acid, Churchill's tincture of iodine, sticks of nitrate of silver, sticks of caustic potassa, the use of the curette, divulsion, hypnotics, anodynes, etc. The use of these agents is based on the idea of removing the membrane, relieving congestion, and making the patient comfortable. The secondary influence hoped for in the local treatment has been to produce a direct action on the connective tissue immediately beneath the mucous membrane. Then came a plan to modify this "harsh treatment," as we gradually learned to call it. This modification was the application of the galvanic current of electricity to produce the same theoretical results that had been hoped for by the use of caustics, but this failed through ignorance of the action of the agent and the employment of *too strong currents*.

My treatment of membranous dysmenorrhea, according to the plan to be given in this paper, comprises: 1. Position. 2. Bipolar galvanization. 3. Divulsion (if flexion or version). 4. Central galvanization. 5. Continuing exercises for some months after treatment is discontinued.

A very important factor to be observed at the very outset is the arrangement of the patient as to position before, during, and after treatment. This position must be determined by the position of the uterus. If anteverted or anteflexed, the patient must rest flat on her back upon a bed, lounge, or bench, place her clasped hands over her head, put her heels close up to the buttocks, and then proceed to raise her body,

arching herself and keeping this bowed position until three good, full inspirations are taken, after which she lowers herself to the horizontal position. While resting, she takes three more inspirations as before, after which the arched position is again assumed, and this is repeated from three to five times. At the commencement of the treatment three times—that is, nine inspirations—should be used twice a day, morning and night, the times when the garments are loose. After a day or two have the exercise taken three times daily. When the exercise is completed, have the patient rest for five minutes. If there is retroversion or flexion, have the knee-chest position taken, and pursue the same course as in anteversion or flexion. After these exercises have been employed, begin the electrical treatment by introducing into the uterus a bipolar electrode, the one of my devising (see Fig. 1) being the best,



FIG. 1.

because it can be bent very easily to meet any curve that may be presented, and when *in situ* the poles may be separated to suit the length of the uterine canal. Then turn on the *galvanic*¹ current until five milliamperes are registered; or, if this treatment be used by the general practitioner, who may not be equipped for the measurement of current, he will find that two Leclanché cells with my electrode will give the current desired. The effect produced by this amount is to contract the endometrium, disintegrate the uterine cells, stop the mouths of the capillary vessels, paralyze the peripheral nerves coming to the endometrium, and, by that peculiar influence of electricity called induction (if I may be allowed so to use it), penetrate still deeper and produce a marked influence along the nerves. In this application be careful to use the *negative* pole in the cavity of the uterus, and have the other metal point, the *positive* pole, about midway between

¹ Not the faradic, that has always been associated with the bipolar application; I believe I am the first one to suggest and use the *galvanic* current by the bipolar plan.

the internal and external os, or just resting within the external os. Very little distress will be caused after it has been used a few times, and when the patient has become accustomed to the electricity the current can be increased to ten milliamperes. This bipolar application should last five minutes, and there should be three days' rest between treatments. In connection with this plan of application, the general condition and symptoms will be greatly improved by central galvanization—that is, an application of the galvanic current made by putting the positive electrode at the pit of the stomach and the negative at the end of the spine over the sacrum, and using about the same strength of current, ten milliamperes. Be careful to have a good-sized electrode, say about four inches square. This application may be made between the bipolar treatments, for five minutes at a time.

After the electrical treatment, *divulsion* is in order, because now the tissues are softer, exudations are absorbed, and the uterus can readily be stretched and is less liable to return to its abnormal condition. Lastly, the *position* exercises must be continued, as they facilitate the return circulation by overcoming certain constrictions that may be caused simply by position, and besides help the blood by gravitation to get back into the general circulation.

In summing up I will say I have found that a current of electricity of from five to ten milliamperes of strength will, when passed through tissues like the endometrium or the membrane of dysmenorrhea, produce the following effects: It softens and disintegrates these tissues, and by its electrolytic effects produces small emboli or clots in the capillaries and small vessels, plugging them up and causing an effect like that of ligating. It also produces a general stimulant and tonic effect on the blood vessels, nerves, and the tissues of the body in general, improving the appetite and assimilation of food, and at the same time increasing the peristaltic action of the bowels and curing the constipation so often met with in these cases.

In the experiments made on the uteri that had been submitted to the strength of current applied for the time mentioned, one could with his nail easily remove a layer of the mucous membrane, and at the same time could not fail to

observe the marked pallor of the tissue, which in places extended clear through the body of the uterus.

Fig. 2 illustrates the fact that absolute restricted localization is impossible, and shows that the current diffuses itself throughout the entire body. The instrument introduced into the body of the uterus represents the bipolar electrode. The metallic point resting at the fundus represents the *negative* pole; and the other in the cervix, the *positive*. The current flows in continued rings, like the ripples upon the surface of a lake into which a stone has been thrown—from within outward until it reaches the skin. This is prac-

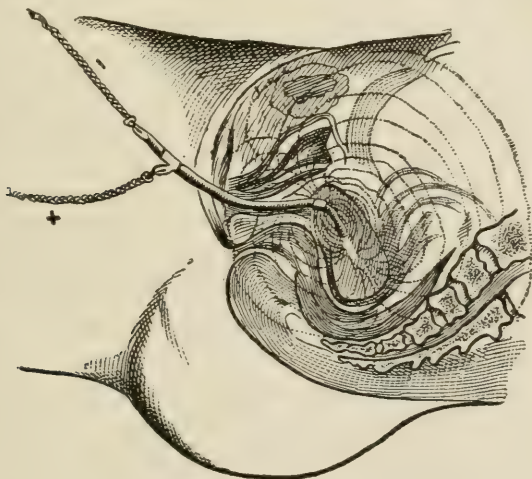


FIG. 2.

tically demonstrated by the physiological symptoms and observations of the patient, such as giddiness, flashes of light, and the peculiar metallic taste that patients speak of, which is due to the diffusion of the current upward.

Mr. Edison has devised an instrument so delicately adjusted that it is influenced by induced action generated by a current of electricity conducted through a wire placed at a distance of forty feet. The shorter the distance between the poles the greater will be the proportion of the current flowing through the tissues immediately between them; the longer the distance the more it will diffuse itself through the more distant tissues. For as the poles recede from each other, it is obvious that the

differences between the length of, and the resistance offered by, the direct path from pole to pole, and the extent and resistance of the remote path, diminish proportionally. Though the amount of internal tissues included between the electrodes does not materially interfere with the strength of the current, it does govern the distribution of the current or its density in the portion of the body passed through. Hence the practical rule that the nearer the electrodes the denser the current and the more powerful the effect on the tissues immediately between them.

36 EAST 65TH STREET.

AN OPERATION FOR SHORTENING THE UTERO-SACRAL LIGAMENTS.

BY

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(With one woodcut.)

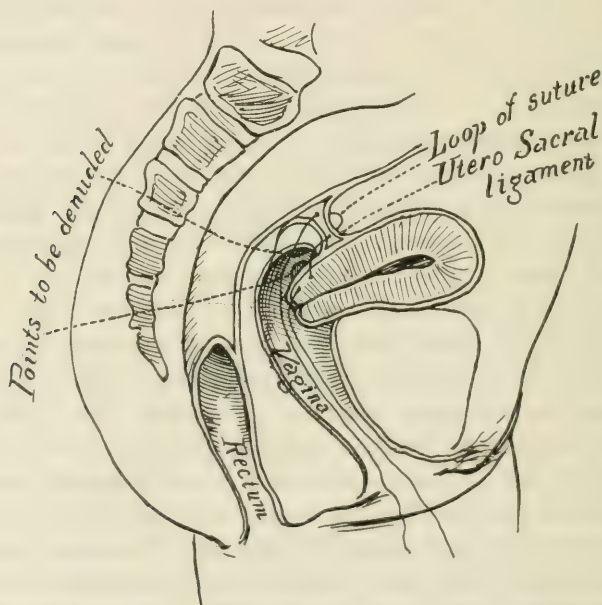
SINCE first mention of the new operations for retention forward of the retrodisplaced uterus, I have kept close watch of reports of the different operators. I have myself made Alexander's operation three times only. In my first case I had much trouble in finding the ligaments, and when I did one of them was so slender that it broke with only slight tension; the other was larger, and I had little trouble in securing it properly. The patient did well, and the uterus remained forward for about two months, when I found it in nearly its old malposition. In the next case I had only slight trouble in finding the ligaments, and after the operation the patient's uterus stayed pretty well forward; this case was a simple retroversion of not very long standing. My third case was an entire failure, as the ligaments were so very slender that all idea of operating had to be abandoned. The

other operation, of ventral fixation, I know of only through reports from other operators. However, I feel quite sure I shall never try to pass a needle through either the fundus of the uterus, or the round ligament at its junction with the uterus, for the purpose of fastening to the peritoneum of the abdomen, without first opening it; I should feel there was great danger of wounding some of the intestines. As for advising laparotomy for the relief of almost any case of uterine displacement which one is likely to meet, I should dislike to take any such responsibility, for most such cases, with proper care and treatment, can live pretty comfortable lives, and that, too, without much danger of having them shortened by the existing displacement. Leopold, after operating, very tersely states the situation when he says: "It is a self-evident axiom that the non-operative treatment of retroflexions must now, as formerly, be regarded as an extremely valuable course, and should be given a most thorough trial before broaching the subject of operation."

The foregoing has been written to simply call the attention of the reader to what the writer considers a much better and safer method of operation, when operation must be made, to overcome retrodisplacements of the uterus. In 1883 I described for the first time the operation of "post-cervical adhesion." The article was published in the Cincinnati *Obstetric Gazette* for February, 1883, under the head of "An Operation for Closing Douglas' Cul-de-sac." I had done the operation more than three years before the publication of the above-named article, and described it in a short paper read before the Grand Rapids Medical Society; but the operation was first published in the article of 1883. Since that time I have done the operation many times, and it has been made by gynecologists in different parts of the country with varying success. Of my cases I think about one-half have been successful. Dr. James B. Hunter, of New York, reported to one of the city societies "The Operation of Post-cervical Adhesion," believing at the time it was original with him; but during the discussion which followed the reading of the paper Dr. Mundé informed him of the prior description in the Cincinnati *Gazette* of 1883. Soon after Dr. Hunter wrote me a letter of apology, disclaiming any intent in the

matter, as he had not seen the article in question. This will not surprise any one who ever knew Dr. Hunter, for, fair-minded gentleman born as he was, he could do nothing else—it was his nature to be just. Dr. Hunter, in his letter (which was written but a short time before his death), said he had only fair results from the operation, some holding the uterus forward, others soon pulling back again.

Some few months past I came to the conclusion that the reason some of my operations for stitching the cervix to



Douglas' cul-de-sac were successful and others not, was that in the successful cases I had introduced deep sutures which I believe included a portion of the recto-vaginal or posterior ligament; for I noticed it was those cases each time that held the uterine neck back. This led me to attempt the modification of post-cervical adhesion as an operation, by shortening the posterior ligaments without opening the abdomen. The method of procedure is as follows: The patient being placed in Sims' position, and the perineum drawn back with a Sims' speculum, the posterior portion of the uterine neck is denuded with a pair of Emmet's curved cervix scissors; then the cul-de-sac of Douglas is in turn denuded to

correspond with that of the uterine neck. The size of surface to be attached depends upon the case: if the vagina is very voluminous at its upper portion, the whole of the posterior uterine neck and Douglas' cul-de-sac may be denuded; or the upper part of the cul-de-sac may be left and the denudation made a little lower down, so as to take up some of the slack in the posterior vaginal wall (see description of this operation in *Obstetric Gazette* for February, 1883). The first suture should be introduced through the membrane of the cervix, with a curved needle of as great length as can be used through the speculum; then it should be carried high up through the wall of the cul-de-sac and as close to the uterus as possible, when the operator will distinctly feel the needle pierce the utero-sacral ligament; then he should carry the needle well back and as close to the rectum as possible, when he will again feel the needle as it is inserted into the ligament; after which it should be carried back and out through the cul-de-sac close to the edge of the denudation, when the silver wire can be drawn just moderately tight and twisted. The operator will at once have the gratification of seeing the uterine neck drawn well upward and backward into its proper place. After the first deep suture is taken, then the other superficial sutures may be introduced to unite the cervix and cul-de-sac. Before the deep suture is taken the operator should pass the finger into the rectum, and, as the uterus is thrown forward with the sound, he can distinctly feel the utero-sacral ligament as it pulls upon the wall of the rectum to which it is attached. While introducing the deep suture he should keep the finger in the rectum as a guide to avoid puncturing it. As will be readily seen, when the deep suture has been passed the utero-sacral ligament is folded upon itself, and union takes place between these folds and also to the wall of the cul-de-sac, which shortens the ligament more than one-half and makes a firm point of support to the cervix, as will be seen after union by the deep dimple at point of union of ligament and vaginal wall. In two cases I passed two deep sutures, one on each side—that is, after passing the one on the right side, the patient was turned over and another passed in the same way through the left side. But the uterus seems to stay just as well after shorten-

ing only one ligament ; whether in time it will prove better to have shortened both I cannot now say.

Another way to shorten the posterior ligament, and which I have practised in one case, is to denude as before, then with a pair of straight scissors cut directly through the cul-de-sac as close to the uterus as may be, then through the opening pass a small blunt hook and catch up the ligaments, after which they can be stitched into the wound in the cul-de-sac. This latter method is, of course, the surest to hold, and the operator can shorten the ligaments to his fancy ; besides, he can secure both ligaments at once, and fasten them both with the same suture. But he takes more chances and opens into the cavity of the abdomen. Of course when the uterine neck is stitched to the cul-de-sac it covers well the little opening, but nevertheless it is doubtless more dangerous. In the single case upon which I operated this way there was no trouble, the uterus being held firmly in its normal position.

This operation of shortening the utero-sacral ligaments is, in my judgment, the most rational procedure yet devised for holding the fundus of the uterus forward. I am aware that this is not the first attempt at shortening the utero-sacral ligaments, but it is, I believe, the first without opening the abdomen. Both Fromel and the late Prof. Byford suggested shortening these ligaments, and both, I believe, operated several times with some success, but both operators first opened the abdomen ; and their methods differed from the one just described, in that the folds of the ligament were drawn outward and attached to the lateral walls of the pelvis. I have no doubt the method would prove successful in holding the cervix uteri backward and the body forward. But surely the operation is by no means so simple nor as devoid of danger as the method proposed in this article.

In describing the operation I neglected to state that, besides placing the patient in Sims' position, the hips should be elevated sufficiently to balloon the vagina, thus causing the contents of the abdomen to gravitate forward so as to be well out of the pelvis. For introducing the needle which carries the deep suture I use Sims' long needle holder, which, after passing the needle through the cervix, enables the operator to easily carry the suture through the ligament and back into

the vagina by simply rotating the hand which grasps the holder. Some may think a single suture passed through the ligament forward and back would be quite unlikely to cause union to take place between the folds of the ligament and the vaginal cul-de-sac. I thought so when my first operation was made, but so far the parts have united in every instance. And there is good reason for it, as there is a certain amount of adhesive inflammation which takes place at each point where the suture passes. Besides, the inflammation set up by the denudation of cul-de-sac and cervix materially aids the union of the ligament at that point, and every one knows how a little inflammation often causes adhesion in a retroverted uterus.

I by no means wish to be understood as condemning laparotomy in all cases of displacement, for I can very well see the unavoidable necessity of such a procedure when the displacement exists in connection with marked disease of the appendages through which there are firm adhesions. In such cases the diseased condition would call for opening of the abdomen, even though there was no malposition of the uterus. But when there is prolapse and retroversion in connection with such a diseased condition of the tubes and ovaries, I believe an effort should be made to overcome such displacements at the time of operation, either by ventro-fixation or some other method. However, I believe more satisfaction could be obtained under such circumstances by shortening the utero-sacral ligaments, as it puts the uterus more nearly in its normal position; and I think I should shorten them in the way described, even though it had been necessary to make a laparotomy for other causes.

CORRESPONDENCE.

PROF. LEOPOLD'S CLINIC.

FRAUEN KLINIK, DRESDEN, January 11th, 1891.

DEAR DR. MUNDÉ:—I have now been in Dresden since Christmas. Before coming here I spent some weeks in Berlin. . . . I am again a hospital interne, of whom there are ten here

besides the regular four salaried assistants. I was impressed at once at Berlin and here by the painfully strict aseptic precautions that are taken, not only in the operating rooms, but in the wards and everything about the hospitals. The results obtained, as far as wound infection goes, are correspondingly perfect. For instance, the first operation that I saw was an amputation of the breast and clearing out of the axilla for carcinoma. After the operation the wound was sewed up without any drainage. This was done as a matter of course and without any comment from the operator, Prof. von Bergmann. It is this *faith* in asepsis, and their precautions to obtain it, that please me. I am afraid Lawson Tait is responsible for that wavering faith in asepsis among English and American surgeons and gynecologists. It will be some time before we will be able to free ourselves from the influence of Tait's sneer at the importance of strict asepsis.

The opportunities for the study of obstetrics and gynecology are excellent at this Klinik. One can learn as much as his former knowledge of these branches has made him capable of appreciating. We have days in the *Gebärsaal* (lying-in room) in turn. On the day that one is on duty he examines the women, takes their histories, and superintends the labors. If any obstetrical anomaly or any operation occurs, all the internes are called. We also all attend the gynecological operations. These operations are made very interesting by the professor, because the full history and course of the case are gone into before the operation, and when through he explains fully the steps of the operation, and closes by giving a very interesting lecture on the etiology, differential diagnosis, and lines of treatment of such cases; this he does at every operation. He also holds almost every morning a sort of clinical lecture on a few of the interesting or important cases that happen to be in the ward. If practicable we also examine the case. He is very interesting, earnest, and thorough in these lectures. Once a week he gives us a theoretical lecture on some subject—last week on the contracted pelvis. The histories of all cases, obstetrical and gynecological, are kept with the greatest minuteness. Notes are made here in the histories every day; everything of any importance is noted down immediately. The records of the labor cases are especially

elaborate and complete. We meet every morning before the operations, in a certain room, at 7:45. There the records of the labors of the day before are handed to him; these he reads aloud and makes full comments on them. In each history any point that was at all anomalous affords him a text for a very interesting discussion. These morning meetings are very valuable to us. We carry away each time a lot of very valuable ideas and pointers. Every Saturday afternoon we have *Referat*, at which, after one of the internes has read an abstract of an important obstetrical article from that week's journals, Prof. Leopold holds a long discourse on that subject.

They have about fifty births and about twenty-five operations, of which three or four are laparatomies, each week. Still our time is hardly filled out. We have abundant time to read, and it becomes often very *langweilig* (tedious). There are large surgical and medical clinics on the adjoining grounds, but we are not allowed to visit them for fear of carrying sepsis.

Prof. Leopold lays the greatest stress on becoming expert in external examination of pregnant women. Vaginal examinations are made as seldom as possible. He says all information can be obtained from external examinations and measurements. A woman in labor is examined vaginally only once, to see if there is any prolapsing part or other anomaly; a second examination is made only when some circumstance seems to call for it. A vaginal examination is a formidable and complicated process as practised here—this refers, of course, only to obstetrical cases. The external genitals are thoroughly scrubbed by a nurse. Those who are to examine the woman must have taken a bath that morning. All who are in the *Gebärsaal* have on clean, long, white gowns. Then the assistant and the other physicians who are going to examine arrange themselves in a row in front of the wash basins, their arms bare to above the elbow. When all are there, the assistant calls out, "Anfangen, meine Herren" (Begin, gentlemen), and reads off the exact time from a clock which hangs in front of his wash basin (finger nails, of course, must be very short). Then follows energetic scrubbing of the hands and arms with brush and soap and water for

five minutes. When the five minutes are up, the assistant calls out, "Sublimat!" and a nurse brings each man a basin containing warm 1:2,000 sublimate. Again scrubbing with brush, soap, and this sublimate solution for three minutes. When these are up, the assistant again calls out, "Sublimat!" and a fresh basin of 1:1,000 sublimate is placed before each one. A scrubbing with brush and this solution finishes this *ten minutes'* disinfection. Then the hands are kept immersed in the sublimate until one's turn comes to examine. The examination must be brief; one finger only is permitted to be used, and the examining finger must not be inserted between the membranes and the cervix. No more than five examine one patient at a time, and, as I said before, only one examination is allowed. If another woman is to be examined next, the whole disinfection is gone through again. The vagina is not irrigated before or after labor, unless the case is pathological. After labor the woman is examined only when discharged. All cervix, vaginal, and perineal tears of sufficient size to require it are immediately sewed up with silk. The professor says that all puerperal fevers are due to infection carried in by the examining fingers—auto-infection, he says, is scarcely possible. "The ideal childbeds are those in which no vaginal examinations have been made," he repeats almost daily.

About twenty per cent of our cases have contracted pelves. He has done two craniotomies since I came here; and there are now two women in the house on whom he will do Cesarean section within a few days. He does not use the combined external and internal method to perform version. The men here tell me that he is the extremest in Germany in the matter of asepsis in labor cases, and I understand that his statistics in regard to puerperal fever are the best.

Prof. Leopold has three or four laparatomies a week. He has a special operating room and set of instruments for laparatomies. He makes a long incision, exposing fully the pelvic viscera. He operates with but *one* assistant, thus minimizing the number of infection carriers—the fingers (other German laparatomists also operate with but one assistant). The disinfection of the hands and arms is done in the way described above in labor cases. He always uses chloroform. He has the pelvis of the patient *highly* elevated during the operation;

that keeps the intestines out of the way nicely, and exposes the pelvic organs to view beautifully. If a pedicle is broad, he ties it off in two or more parts, using thick silk, and then behind each of the first ligatures he applies a second with finer silk, so that if the first should slip the second will still hold. He uses the ordinary surgical knot. He sews up the abdominal walls with silk. I have not seen him use silkworm gut at any operation. He does all his laparatomies early in the morning.

He does a large number of vaginal hysterectomies. He does not use clamps, and changes the gauze the third morning. He does these for carcinoma and multiple myomata. The last one he did was for septic metritis. It was a case of incomplete abortion that came in with a fetid vaginal discharge. He curetted and irrigated the uterus when she came in. She continued to have a septic temperature, however, so he determined to remove the uterus three days later, on the supposition and hope that the septic process was yet confined to the uterus, she not having any peritonitis or much parametritis. He did so in the usual way; the woman, however, continued to develop symptoms of septicemia, and is either dead or dying now.

I am getting entirely new ideas on the subject of pelvic inflammations. The subject is much more complex and more satisfactory than my knowledge until now has made me think it is—more satisfactory, because the various causations and the pathological anatomy are now becoming known to me. This group of troubles is not so simple in prognosis and treatment as I thought it was. I shall make a careful study of these, and shall watch carefully the treatment as followed here.

He does not use the Sims position, but does all vaginal and cervical operations in the dorsal position of the patient. He does not do Tait's operation for perineum; uses silk for all perineum and colporrhaphy sutures. Curetting of the uterus is a rather formidable operation here. He always does these himself; always does them under anesthesia. He disinfects himself and the vagina as carefully as for a more formidable operation. He then *gradually* dilates the cervix with Simon's dilators. Then when the cervix is widely dilated he disin-

fects it with five-per-cent carbolic sponges. He cures very gently, so as not to remove the deeper layers of the mucus membrane. He says rough curetting removes the *whole* thickness of the mucous membrane, and that lays the foundation for future menstrual troubles. He does not touch the curetted surfaces with iodine, claiming that that cauterizes away what he purposely has left of the mucous membrane. He touches the surface with sesquichloride of iron, then tampons the vagina with iodoform gauze. He is very careful about asepsis in all of his operations in the uterine cavity. After removing polyps or fibroids from the uterus (vaginally), he drains its cavity with iodoform gauze.

All gynecologists in Germany have operating tables on which the buttocks can be raised or lowered easily during the operation, especially during all vaginal operations. I see now the great convenience of such an arrangement for the operator. . . .

February 9th, 1891.—I leave the Dresden Frauenklinik to-day. I have been here now about two months, and have learned much. We had about three hundred births during this time, among which occurred an unusually large number of pathological cases: eight cases of prolapse of the cord, one rupture of the uterus, three cases of twins, many contracted pelves, four perforations and extractions, and any number of versions and forceps cases.

Prof. Leopold operated on two cases of extra-uterine pregnancy. One was tubal and the other a so-called abdominal pregnancy that had gone on to full term. He operated on the latter about four weeks after term and the death of the child. He got the tumor out whole, membranes and all, without rupturing it, making a pedicle below, like an ovariectomy. The transverse colon was rather firmly adherent, but the other adhesions were slight and easily torn off with the finger. He froze the specimen and then sawed it through, getting a wonderfully beautiful specimen.

I do not feel that I need to stay here any longer on account of obstetrics. Prof. Leopold does an immense number of gynecological operations. All I see of these cases, however, is the operation. We do not get a chance, except in rare cases, to examine them before, nor do we see them again

after the operations. I would have to remain here two more months before my turn comes to be interne in the gynecological wards. Merely to see the operations is not worth my staying here. I have seen and shall see plenty of operations. To examine the cases and make the diagnosis is what I mainly want, and practice in this we do not get.

I am exceedingly thankful, however, for the knowledge of obstetrics that I have obtained. I cannot imagine a better place to learn this branch; the material is superabundant, the cases crowd in so rapidly sometimes that we have no time to examine them, and the thorough and scientific manner in which the professor explains and teaches how to manage every obstetric anomaly is worth very much. He is always at hand to help and explain every difficulty.

I liked Prof. Leopold's operations for prolapse very much. He amputates the cervix and does an anterior and posterior colporrhaphy. In the anterior colporrhaphy he cuts away a very wide piece of the mucous membrane from the whole length of the anterior vaginal wall, including the anterior surface of the cervix. He amputates the cervix after the area of mucous membrane is dissected away, and then sutures. He begins the paring just back of the meatus. By treating the cervical portion that way, he sews, as it were, the uterus on to the anterior vaginal wall. He is very fond of vaginal total extirpations, and does a great many of them. He does all of his laparatomies with the pelvis of the patient very much elevated; he thus gets a plain view of the pelvic organs, having made the incision long enough. As far as I can see, his results are no better, and in some cases not as good as yours were. His laparotomy cases often suffer a long time from shock, which is probably due to the large exposure of the intestines incident to the long incision.

With kindest regards,

SAMUEL L. WEBER,
*Late House Surgeon, Mount Sinai Hospital,
New York City.*

SECONDARY LAPARATOMY FOR INTESTINAL OCCLUSION.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—After reading in the December number of your JOURNAL the history of Dr. Krug's case of "Secondary Laparatomy for Intestinal Occlusion," I thought the following history might interest some of your readers:

Mrs. H. P., 51 years, married at 20, widowed at 36; IXpara; twins at last confinement, seventeen years ago. Family history negative. Had hysteria at 15 and again after husband's death. During first attack was bled fourteen times in fifteen days. Measles at 18. Has had several very severe attacks of bronchitis. Was never very strong. Menstruation began at 12 years, and was always regular though profuse until May, 1890 (her 49th year), when she missed one period. Slight discharge in July, and then nothing until September 30th, when after a vaginal examination she had a profuse discharge which lasted until October 15th.

In January, 1890, she noticed some swelling of her abdomen. In May this swelling was accompanied by pain, and she discovered that she had an abdominal tumor. This tumor gradually increased in size until July 9th, when, after suffering all day with severe pain in the hypogastric region, and while getting into bed, the tumor, then as large as a gravid uterus at seven months, suddenly disappeared. July 19th tumor again perceptible. September 4th, while in bed with her daughter, the latter fell across her. The tumor, which had attained about its former size, disappeared immediately, causing intense pain which lasted twenty-two hours, after which she was confined to bed for eight days. September 19th tumor again perceptible.

State on admission to hospital, November 6th, 1890: Patient is a thin, weak-looking, nervous woman, having abdomen distended as at the eighth month of pregnancy, by a median tumor, smooth, globular, and fluctuating, very slightly movable from side to side and upward. Uterus normal in

size, posterior to the tumor, and only very slightly movable.

November 8th, laparatomy. Removed a large cyst of right ovary. It was adherent to the brim of the pelvis on the left, and also to the sigmoid flexure. The two raw surfaces left after separating these adhesions were not more than a half inch each in diameter. The left ovary, being cystic, was removed also. No drainage. November 9th, gave magnesia sulphate. November 10th and 11th, had a stool each day. November 12th, temperature normal. November 13th, gave magnesia sulphate, which produced a very copious evacuation, accompanied by severe pains in lower abdomen. Temperature normal, pulse 88. November 14th, temperature 98.6° , pulse 120; a stool. November 15th, temperature 98.6° , pulse 120. November 16th, temperature 98.6° , pulse 120. Vomited everything during the afternoon and evening. Slight tympanites; no pain.

On the morning of the 17th the vomited matter became stercoraceous. Temperature 99° , pulse 130. I reopened the abdomen and found upper part of small intestine congested, distended, and adherent in three places, viz.: to the two denuded surfaces left after removing the cyst, and also to the pedicle. Below this point the bowel was contracted. The adhesions were such as to produce an acute angle in the gut. While trying to separate them the serous and muscular coats of the bowel were torn. The rent was closed by three Lembert sutures of catgut, the abdomen flushed with hot water and closed. November 18th, no vomiting, temperature 99.2° , pulse 126. One stool after a dose of magnesia sulphate. November 19th, temperature 99° , pulse 120. On the 21st a severe attack of bronchitis set in, from which she suffered during three weeks, eventually recovering completely.

MICHAEL J. AHERN, M.D.

QUEBEC, January 27th, 1891.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, December 16th, 1890.

BACHE McE. EMMET, M.D., *and later the President,*
JOSEPH E. JANVRIN, M.D., *in the Chair.*

SECONDARY LAPARATOMY FOR INTESTINAL OBSTRUCTION.

DR. H. J. BOLDT presented a tube and ovary removed for chronic inflammation. The patient had been a sufferer for years, and had received every form of treatment without avail. Finally the offending organs were removed. The tube contained inspissated pus. The adhesions, as in most similar cases, were dense and diffuse. A few days after the operation there developed symptoms of intestinal obstruction. Unfortunately, he said, he did not open the abdomen on the first appearance of these symptoms, but waited, as surgeons had frequently done, until it was too late to save the patient. When the abdomen was opened the intestinal obstruction was readily relieved, but the patient sank and died within a few days.

DOUBLE HYDRO-SALPINX AND OÖPHORITIS.

A second specimen presented by DR. BOLDT consisted of the tubes and ovaries removed in a case of double hydro-salpinx and oöphoritis in a patient who had received various forms of treatment, including electricity, without benefit. She had recovered from the operation.

SARCOMA OF THE KIDNEY.

DR. BOLDT also presented a kidney which had undergone sarcomatous degeneration and formed a large tumor. The patient from whom it was removed was 26 years of age. The tumor had been of exceedingly rapid growth, as shown by the fact that, three months before the operation, he had had occasion to examine the abdomen carefully for another reason, and at that time no tumor could be felt. When the patient came under observation again the entire left half of the abdomen was filled, down to the brim of the pelvis. The points of interest in the case related to the rapid growth of the tumor and the question whether it was best to make the lumbar or the abdominal incision. He had performed the lumbar ope-

ration, and the result had shown that it was the preferable method in this instance; for the sarcomatous mass broke down easily, and at one point where it was torn cheesy material escaped and obscured the field of operation. Had the abdominal incision been made, and this material escaped into the peritoneal cavity, the patient would have run great risk of life. As it was, a good recovery ensued. The tumor was so large that it had been necessary to resect a portion of the two lower ribs. The peritoneum was also opened, but was closed immediately.

OVARIAN CYST WITH A LONG, HALF-TWISTED PEDICLE.

DR. BOLDT showed still another specimen, consisting of an ovarian cyst with a long pedicle. A smaller cyst was attached to the larger. The pedicle was so long that the tumor could be moved about anywhere in the abdominal cavity, and had been the cause of some confusion on the part of the operator. When the patient first came to his clinic the tumor was diagnosed at once; but when she was examined again in the hospital he was unable to find the mass. He sought for it probably an hour, and, not finding it, began to doubt his former diagnosis. Dr. Lee then examined the patient and felt the tumor at once, for it had again descended and could be readily made out. A satisfactory recovery followed its removal.

In conclusion, Dr. Boldt invited remarks on the choice of methods in nephrectomy and on the indications for opening the abdomen for intestinal obstruction following operations.

DR. BACHE McE. EMMET remarked that the choice of methods in removal of tumors of the kidney had been, as Dr. Boldt had suggested, thoroughly discussed. When the tumor was small, and probably could be easily removed through a small opening, the preference had been given for the lumbar incision. Dr. Boldt had succeeded in removing a large tumor through an incision in this region, but he had resected two ribs in order to obtain more room. The anterior incision gave greater facility for working, especially when the tumor was large. He thought Dr. Boldt's case was of great interest, in that two examinations had been made only three months apart, and at the first no tumor was evident, while at the second there was one filling that side of the abdominal cavity. He asked Dr. Boldt why he chose the lumbar method in this case.

DR. BOLDT said that, in view of the fact that this kidney broke down so readily, he considered himself fortunate in having made the lumbar incision and thus avoided contaminating the peritoneum. As a rule, however, in large

tumors of the kidney he would choose the abdominal incision, and in doing this he would be acting in accordance with the experience of European gynecological surgeons.

DR. BACHE EMMET then made some remarks upon the second question raised by Dr. Boldt with regard to secondary laparotomy for intestinal obstruction. If there was conclusive evidence of intestinal obstruction, he thought we should operate at once. In practice, however, we found ourselves governed by the ability of the patient to bear the operation and the urgency of the case. Usually there was, for a time at least, some doubt whether there really was obstruction, and in that event we hesitated for still further assurance. If the patient were still under the influence of shock from the first operation, one hoped that she would be better prepared for a second one if he waited a day or more. He knew of no case in which spontaneous relief had occurred after the surgeon had become convinced that obstruction existed. He asked Dr. Boldt what points had guided him in this case.

DR. BOLDT, in replying, said that we often met with cases in which, a few days after abdominal section, incessant vomiting set in, no food being retained on the stomach, there being at the same time no fecal passages. Injections returned as soon as introduced. The question arose in such cases, as it had in the one which he had narrated, whether it was advisable to open the abdomen on the suspicion of obstruction, or to wait. It was known that a number of such cases recovered without anything being done, while others died. In those which recovered it could be said there had been no obstruction, for in true intestinal obstruction after laparotomy recovery never took place without an operation.

DR. BACHE EMMET said that his previous remarks were based on the supposition of a positive diagnosis, but the further question had been raised by Dr. Boldt whether we could feel assured of the existence of obstruction by the symptoms mentioned—incessant vomiting and inability to inject water. He held that these two symptoms could not be taken as sufficient evidence of intestinal obstruction. If pain were superadded, as well as evidence that the bowel was making efforts, though powerless ones, to overcome the point of obstruction, he then thought one would be warranted in making an incision. He thought that in many cases there was persistent vomiting, with perhaps some degree of sinking, yet intestinal obstruction did not exist. He had seen such cases recover on being let alone, but if obstruction existed spontaneous relief would not take place.

DR. RALPH WALDO said that in most cases in which he had seen secondary laparotomy performed the patients were in a sinking condition and died. If they did not die imme-

diately from the shock of the operation, they did die shortly afterward. He thought, therefore, that if, in making the diagnosis, reliance had to be placed on the fact that the patient was sinking, it would be better not to operate at all, but give the patient the chance of there not being obstruction. Of course, if the diagnosis of obstruction were beyond doubt, an operation should be performed; but a positive diagnosis could not be based on mere persistence of vomiting and inability to inject water beyond a certain point in the gut.

DR. CLEMENT CLEVELAND had seen a number of cases of secondary laparotomy, all having terminated fatally. He had also seen a number of cases in which the symptoms were those of intestinal obstruction, yet, after judicious waiting, the trouble had cleared up. But they did not always turn out favorably when let alone. A case in point was that of a patient on whom he had operated on Friday last for left pyosalpinx. He had great difficulty in tearing off the adhesions, and in two places where they gave him most trouble the intestine was left bare. There was considerable bleeding where the adhesions had existed, and he introduced a drainage tube and gauze. The gauze was removed after about twenty hours. The patient did very well for about forty-eight hours, when she commenced to have a little nausea. She did not vomit. Calomel was given in small repeated doses without causing passages. Then high injections were resorted to, without, however, causing a movement. The patient began to show marked depression; yet, being convinced from observation that nothing would be gained by doing secondary laparotomy, and feeling that there was a chance of recovery if it were not resorted to, he let her alone. She, however, died; but he was still satisfied that she would have died, and died sooner, had he performed the secondary operation. It was only in rare cases that the patient could be saved by reopening the abdomen.

DR. A. S. HUNTER asked Dr. Cleveland what he meant by a high injection, and how it was given.

DR. CLEVELAND replied that it was given by his house surgeon, who spoke of it as a high injection. He probably passed the tube up four or five inches, but could not go very far. He could not get beyond the obstruction—if that was the point which Dr. Hunter wished to bring out.

DR. HUNTER said he only wished to know what was considered a high injection. To him a high injection would mean an injection which would reach all the way up to the stomach. The experience of those who had spoken during the evening went to show that secondary opening of the abdomen was not successful as a rule; therefore it could not be regarded as the most advisable means to employ. Then the

use of morphine had been suggested, also waiting for the intestine to become pervious, and, finally, the use of an injection.

With regard to treatment by injections, he thought something might be learned from the method as it had been employed in overcoming intestinal obstruction in infants. One of the later methods employed in such cases was hydrostatic pressure. He had himself had an experience with it four or five years ago which might be worth mentioning. The infant was about to die from intestinal obstruction, and, other means having failed, he resorted to a method suggested by Dr. William E. Forest. Introducing a large vaginal tube into the rectum, he bushed it by winding a bandage closely around it, then attached a long tube to its outer end, long enough to reach up two stories. The infant was inverted between his knees, and an attendant was directed to carry the fountain syringe, connected with the extremity of the long tube, upstairs. He had not gone to the height of two floors before the obstruction was overcome and the water ran out of the patient's mouth. He would call that a high injection.

DR. BOLDT said Dr. Hunter had misunderstood him if he thought he used morphine in cases of intestinal obstruction. He had in mind cases of incessant vomiting, not of obstruction, when he spoke of giving morphine.

DR. A. H. BUCKMASTER said that one might suppose, in trying to give a high injection, that he was introducing the tube high up into the gut, when in fact he was simply invaginating the gut. In one instance in the Woman's Hospital he had succeeded in making thirty-two inches of the tube disappear, yet subsequently, when the patient died, it was found that the stricture was only a short distance above the sigmoid flexure. The gut, he said, had been pushed before the tube, which had also probably coiled up. He thought that much force, however gently exerted, might cause rupture of the gut.

DR. W. R. PRYOR thought morphine should be the last thing to use in a case of supposed beginning intestinal obstruction from adhesions. He would employ it only to relieve dying pains. On being informed that Dr. Boldt did not suggest its use in cases of obstruction, but in vomiting only, Dr. Pryor objected to its use there also; it would cause vomiting rather than allay it.

DR. HANKS would reply to the question what constituted a high injection by saying that an injection above the brim of the pelvis might be considered a high one.

DR. R. A. MURRAY would call attention to two points. First, the symptoms which had been pointed out as indicating

paralysis of the intestine had been almost absolutely those of peritonitis. Only one symptom had been mentioned which would aid in differentiating between the two conditions; that was that the bowels had not moved. But in a good many cases of suppurative peritonitis the bowels did not move either. Now, since obstinate vomiting, unless relieved, was almost surely fatal, and since it had come to be recognized that the proper treatment of suppurating peritonitis was to open the abdomen, and since of course in intestinal obstruction this was the proper thing to do, he asked, when the symptoms which had been mentioned were present, why not do laparotomy? He had himself had one case and had seen a number of cases in which the diagnosis was made of paralysis of the intestine, yet the patient was proven to have suppurating peritonitis. True, there was paralysis of the intestine, but it was due to the peritonitis, and the latter might have been made out and perhaps treated successfully had the abdomen been opened. He would ask, then, whether a positive diagnosis could be made between suppurative peritonitis, paralysis of the intestine, volvulus, or adhesive bands, without opening the abdomen.

DR. BACHE EMMET would reply to the question propounded by Dr. Murray that in not all the cases with the symptoms he had mentioned was there suppurative peritonitis or obstruction. There might be simply some inflammatory lymph or temporary paralysis. The patient might recover by being let alone. If operated upon and suppurative peritonitis, which Dr. Murray thought called for an operation, were not found, we would have done the patient a serious wrong.

THE PRESIDENT remarked that he was about to express the belief, before Dr. Murray spoke, that suppurative peritonitis was frequently the cause of the incessant vomiting occurring after laparotomy, and of death. But he was quite unable to distinguish between this condition and beginning obstruction due to lymph bands. If there were any absolutely certain means of diagnosing suppurative peritonitis, he would favor treatment by opening the abdomen and washing out the peritoneal cavity, searching at the same time for possible obstruction.

DR. C. T. ADAMS remarked that in the only cases of suppurative peritonitis which he had seen a cathartic would go through; in cases of pronounced intestinal obstruction, of course it would not.

DR. MURRAY said he had been led to make the remarks which he did from a recent case of his own and from observation of cases under the care of others. And on looking over the literature of the subject somewhat, he had come across the statement of a distinguished obstetrician to the

effect that in every case of obstinate vomiting one should open the abdomen. It was true that vomiting might be caused by adhesions between the intestines without the presence of suppurative peritonitis, but the condition of the patient was quite different from that existing with suppurative peritonitis. Where there was suppurative peritonitis there was extreme prostration and lower fever. The only treatment which offered any hope in this condition was that of opening the abdomen and washing out the cavity.

DR. PRYOR could see no reason why a woman might not have obstinate vomiting after an operation without either suppurative peritonitis or intestinal obstruction. It followed that the abdomen should not always be reopened with the existence of that condition.

DR. H. T. HANKS remarked that we could not afford to operate in all these cases. The patients had too many friends who asked such questions as why it was that the abdomen had been reopened just before death. We had to consider the fact that frequently patients would die on the table during the secondary operation.

THE PRESIDENT asked Dr. Adams whether he had meant that in all cases of septic peritonitis a cathartic would pass through.

DR. ADAMS replied in the negative. The cathartic would not go through if there was absolute intestinal obstruction; he thought it would, as a rule, if there was not absolute obstruction, and he suggested that as a means of differential diagnosis.

THE PRESIDENT said that he had had two cases the past three years in which the patients died of septic peritonitis following abdominal section, and although no passages could be induced by any means, yet the autopsy revealed absence of intestinal obstruction. He thought that frequently there was simply a paralyzed condition of the intestine, so that no passages would take place and the stomach would retain no food.

CYSTIC SARCOMA OF THE OVARY.

DR. FLORIAN KRUG presented the specimen, with the following history: The patient was 49 years of age; had been an invalid a number of years; had suffered more severely the past eighteen months. She said she had been operated upon through the vagina under ether narcosis several times, but vaginal examination revealed no evidence of that fact. Dr. Krug saw the case through the kindness of Dr. A. Jacobi. They found a tumor on the right side, firmly connected with the uterus, and a smaller one on the left side almost on a level with the cervix. The former was solid and could not be distinguished from the uterus, with which it was so closely

connected. There was no sign of fluctuation. It seemed, therefore, exactly like a sarcomatous uterus, with a small mass on the left side in Douglas' pouch, which might be an ovary or a hydro-salpinx. The abdominal walls were not very thick. This examination was made under anesthesia, the patient having been removed to the hospital after an attack of peritonitis, of which she had had several. Being satisfied that there was sarcoma of the uterus, they decided not to waste time with electricity or other forms of treatment, but to proceed at once with laparotomy. This was undertaken three weeks ago; the mass on the right side, though closely attached to the uterus, could be peeled off, and proved, like the one on the left side, to be a tumor of the ovary. The tubes were removed at the same time. The patient made a perfect recovery. One might well have mistaken the case for one of fibroid of the uterus, and, had he been a firm believer in electricity, would probably have resorted to the use of large currents.

DR. A. H. BUCKMASTER exhibited Dr. Howard Kelly's sponge forceps, which he highly indorsed.

CONDYLOMA OF THE LABIUM MAJUS AND THIGHS.

DR. RALPH WALDO presented a condylomatous tumor of considerable size removed from the inner side of the labium majus, by the galvano-cautery wire, without hemorrhage. The patient was unmarried, aged 19. This tumor, together with some others on the thighs, had begun to develop six months before their removal. He also removed with the galvano-cautery knife several smaller condylomata from the thighs. It was necessary to grasp them with forceps, and some hemorrhage accompanied their removal when tension was made. The patient was operated on while under ether. There was no pain during convalescence. She left the hospital at the end of five days, although the wounds had not yet entirely healed.

DR. J. H. GUNNING then read the paper of the evening,

THE TREATMENT OF MEMBRANOUS DYSMENORRHEA.¹

DR. A. H. GOELET said he had had no experience with the use of electricity after the manner described by the author. His treatment of membranous dysmenorrhea had been in the same line with that employed in ordinary dysmenorrhea. It was possible that the views which he held with regard to the cause of dysmenorrhea were peculiar. He believed the primary cause, if a primary cause existed, was endometritis. There could be no uncertainty, he thought, with regard to this being

¹ See original article, page 305.

the cause of *membranous* dysmenorrhea. There was a diseased condition of the mucous membrane. We could cure endometritis by galvano-caustic applications, the positive pole being employed. His treatment consisted, first, in bringing about dilatation of the canal, but instead of using the steel dilator for this purpose, as formerly, he now used negative galvanism. The canal having been dilated, he cauterized the surface of the cavity of the uterus with the positive pole, producing complete exfoliation of the diseased tissue. He cautioned against repeating the operation until the irritating effect of the first application had passed off. This method had been entirely satisfactory to him. He used as an adjuvant bipolar faradization of the vagina. This, however, was likely to do harm rather than good, unless applied in a certain way, about which he would have more to say on a future occasion. But the main point was to cure the diseased condition of the endometrium, which could be done by positive galvano-cauterization.

DR. H. MARION SIMS said that when he was in Europe about seven years ago he felt very enthusiastic over treatment by galvanism, and came home thoroughly imbued with Apostoli's ideas. He thought he would be able to cure almost all the diseases the uterus was heir to by electricity, but after trying it faithfully he had to admit that galvanism and faradism had not come up to his anticipations in cases of dysmenorrhea and membranous dysmenorrhea. Dr. Gunning's paper, however, had interested him very much, and the results which he had obtained in the treatment of these cases were very gratifying. While membranous dysmenorrhea was a comparatively rare disease, yet the speaker had seen a good many cases, and he had obtained far better results with thorough divulsion and curetting than by electricity. It was possible that he had not employed the latter as scientifically as Apostoli or Gunning would do. He agreed with Dr. Goelet that the cause of the membranous dysmenorrhea was an endometritis, and he had found that, by divulsing the cervical canal and using the sharp curette until the diseased membrane had been thoroughly removed, leaving a clean, healthy surface to which he then applied pure carbolic acid, a cure could be effected more certainly than by any other means. He knew of no disease which was more trying to patients. He had one patient under observation who had been throwing off a perfect cast of the uterus every month for seven years. She had even undergone electric treatment at the hands of Apostoli himself during the Paris Exhibition, but the membranes continued to form and be cast off monthly. Each month she would bring the cast to her doctor and express the belief that it was the result of pregnancy and abortion. She could not be persuaded that it

was only the exfoliated mucous membrane, until finally she submitted to dilatation, the use of the curette and carbolic acid. This was four months ago, and there had been no reformation of the cast. He thought the treatment just mentioned was preferable to galvano-cauterization, in that it was easier, quicker, and surer.

DR. CLEMENT CLEVELAND said he had seen only two cases of membranous dysmenorrhea. One was seen several years ago in a woman aged 28, who, before coming to him, had undergone all sorts of treatment by various physicians. He put her through the recognized methods—not including electricity, however—and she continued to throw off the membranous cast. The point which he wished especially to make was that once, soon after he operated on her, she got married, became pregnant within a few months, and since then had become the mother of several healthy children and had remained well herself, the casts having ceased to form.

Regarding the pathology, he understood Dr. Gunning to speak of the cast as being an exfoliation of the entire mucous membrane of the uterus. Late research, however, had shown that only the superficial layer was exfoliated, not including real glandular structure.

DR. HANKS thought the paper was a suggestive one. It indicated the possibility that membranous dysmenorrhea was not entirely a local condition; there might be back of it some lesions of the great sympathetic, or other condition. Recently he had seen a case of membranous dysmenorrhea with Dr. Gunning. Before that he had not seen one for three years. He did not cure that patient, but thought he might have done so had he then known of Dr. Gunning's method. The patient had since married and become a mother. In the several cases which had come under his observation, no two of the patients had suffered from the same disease. They all had exfoliation of a certain amount of the mucous membrane of the uterus at the monthly period. But other troubles had been present also. One patient whom he had seen with Dr. Gunning had had considerable laceration of the cervix, with more or less congestion of the part. Other conditions seen in such patients were endometritis, retroversion, ante flexion, etc. Where such other conditions were present it was quite possible to cure the membranous dysmenorrhea by curing those other conditions. At any rate, it would seem that no single course would prove effectual in all cases. In one or two of his cases divulsion, curetting, and trachelorrhaphy had effected a cure. He knew, too, that bipolar application of electricity to the uterus might cure painful menstruation; he had known that a number of years, but he also knew that one or two introductions of the sound sometimes had a similar effect.

In his next case of membranous dysmenorrhea he would try Dr. Gunning's method.

DR. E. L. H. MCGINNIS said the subject of the paper was one in which he had had a great deal of interest for a long time. He thought it offered a wide field for study. Membranous dysmenorrhea, as had already been remarked, was a rare condition, and he thought the remarks of some of the speakers must have been directed in part to other forms of dysmenorrhea. His own experience with membranous dysmenorrhea had not been large, yet he had treated some cases with, and some without, electricity. He was led to think that electricity was not a panacea. He believed it had a place, and in fact the more he used it the more he became convinced that it did have a proper place in treatment. He could say of it in membranous dysmenorrhea that he expected to use it until he became convinced that there was something better. One fact had struck him, and it had already been alluded to, namely, the preference which membranous dysmenorrhea seemed to show for nervous patients. For instance, in an unmarried girl of 18 the pain disappeared after he had used electricity, the positive pole on the neck, the negative pole in the dorsal region. He could give no explanation of the fact. He did not see the membranous cast to verify the diagnosis in this case, but he had good reason to believe the statement of the patient and her mother.

He had been well pleased with treatment by intra-uterine and vaginal faradism, both monopolar and bipolar methods, yet he thought it possible that galvanism might prove superior. He had used Dr. Gunning's instrument, not knowing whose it was, preferring it to Apostoli's because of its greater flexibility. He asked the reader of the paper what was his object in having the patient place her hands over her head and take long inspirations.

DR. H. J. BOLDT said that, according to good authority, if the uterine cavity were cauterized with the positive pole the patient would probably remain sterile afterward. The possibility of this result was sufficiently great, he thought, to make us hesitate in resorting to that method of treatment. So far as dilatation of the cervical canal was concerned, there could be no doubt but that it could be done under negative galvanism, but the canal would recontract and become smaller even than it had been. He could, on the whole, re-echo the remarks of Dr. Sims. According to his limited experience with membranous dysmenorrhea, the greatest benefit had followed thorough divulsion, curetting, and the application of pure tincture of iodine or of carbolic acid. Some cases would resist every kind of treatment. He recalled one case, of which he presented the membranous cast to another society

some time ago, in which the patient was cured after one treatment by divulsion, curetting, and application to the cavity.

DR. GOELET thought Dr. Boldt's remarks applied to his own statements more than to Dr. Gunning's, and he would, therefore, make reply. He did not discourage the use of the curette nor of the dilator; he, in fact, used these himself. He thought that in some cases we were obliged to use them in the beginning. But he remembered one case in particular in which he failed to effect a cure by dilating and curetting, and then applied electricity with a successful result. So far as dilating the canal with negative electricity and getting contraction afterward was concerned, he would say too strong a current must have been used by Dr. Boldt, so that a cauterizing effect was produced. He was himself careful, in applying positive cauterization to the uterine cavity, to leave the protective plug of mucus in the cervical canal. He would not cauterize the cervical canal with either positive or negative pole. Replying to a question by Dr. Boldt, he said he never used more than from ten to fifteen milliampères in dilating the cervix by the negative pole.

DR. MCGINNIS thought that if Dr. Boldt applied pure carbolic acid or tincture of iodine to the cavity of the uterus after curetting, he would produce a greater cauterizing effect than would be produced by the strength of electric current employed by others.

DR. BUCKMASTER said that, so far as sterility is concerned, pregnancy had been known to take place in many cases after the use of positive electricity in the uterine cavity. The lining membrane of the cavity would reproduce itself if only a small particle of it were left. It was very improbable that cauterization by electricity was ever practised so completely as to prevent reproduction of the membrane.

DR. PRYOR thought that a proper understanding of the subject involved a consideration of the menstrual act. In his opinion menstruation was simply an aborted attempt at self-impregnation on the part of the woman. What took place in the uterus was partial exfoliation of the mucous membrane. In membranous dysmenorrhea the mucous lining came away, not in shreds and flakes as usual, but as a large piece. There was yet left behind the matrix of the membrane, if it could be thus termed, which next month would undergo the same process. The proper treatment was, he thought, to remove it all. He even went further than Dr. Buckmaster, and expressed the belief that if no part of the membrane were left in the uterus, yet new membrane would be reproduced.

DR. KRUG said that his experience with membranous dysmenorrhea had been limited to two cases. He was fortunate enough to cure both by divulsion, curetting, and application

of Churchill's tincture of iodine. He might admit the value of electricity, but, so far as cauterization by the positive pole was concerned, it seemed to him a much longer road to travel than to adopt the method which he had just mentioned. Some of the methods were objectionable, in that they required a good many applications, and most patients with membranous dysmenorrhea, being nervous unmarried women, were likely to become more nervous with repeated sittings. His experience had been that in cases of nervous women their nervous condition was made worse when they were kept a long time under local treatment, no matter what might be the local benefit produced. In the class of cases under discussion, he thought it better to give ether once, divulse, curette, and make a local application, and thus cure the endometritis at one sitting. He agreed with Dr. Goelet that the condition was one of endometritis. If this means did not effect a cure, he would then resort to electricity.

Dr. McGINNIS suggested that curetting was not much simpler than treatment by galvanism.

Dr. GUNNING, in closing the discussion, first referred to the cauterizing current employed by Dr. Goelet, and said that he had abandoned such strong currents, coming down from 100 or 150 or more milliamperes to 5 or 10, because it had seemed reasonable from physiological research that the latter should prove effectual, and he had not been disappointed in this supposition in practice. He got from the weaker current as good, even better, effects, with less inconvenience and danger to the patient. Replying to Drs. Goelet and Boldt, he said it was the negative pole, not the positive, which he introduced into the cavity, employing only 5 to 10 milliamperes. Another fact which had set him thinking was the treatment by curetting and scratching about in the uterus. Of the eight cases of membranous dysmenorrhea which he had treated, most of the patients had come from the Woman's Hospital unrelieved, where they had had all other means employed in the right way but without success. So far as curetting and leaving a clean surface was concerned, mentioned by Dr. Sims and others, he would say that the small current, used in the way he had described, would accomplish the same thing in a neat, gentle, and more effective manner. Dr. Hanks had referred to one case in which the woman had been treated by old methods, remained uncured, bore a child; still the membrane formed, but since treatment with electricity had been instituted she had got better. So far as the two poles were concerned, the difference in effect produced by them was very great. The cicatrix left by the positive pole, when used to the degree of cauterization, was firm, hard, and much like that left by nitrate

of silver, while that left by the negative pole was soft and yielding.

He thought distention of the cervical canal had a good effect in straightening out the vessels and in giving the uterus a chance to free itself of engorged blood. He thought that Dr. Krug would find, on using this small galvanic current, that he would accomplish the desired result more quickly, more safely, with less danger of poisoning the patient, of setting up an endometritis if one did not already exist, of creating congestion throughout the entire pelvis, and without the chances of killing his patient which attended the method now employed.

In reply to Dr. McGinnis, who asked why the patient was instructed to place the hands on the top of the head, he said it was for the purpose of getting a purchase while going through the exercise suggested.

DR. W. R. PRYOR read a paper on

A NEW METHOD OF TREATING THE INCISION IN PATIENTS SUB-
JECTED TO LAPARATOMY.¹

Stated Meeting, January 6th, 1891.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

LARGE FIBROID OF THE UTERUS.

DR. W. GILL WYLIE presented a number of specimens, the first of which consisted of a large fibroid of the uterus. The history of the case was as follows: The patient was a married woman, 33 years of age; had never been pregnant; menstruation had always been regular; no dysmenorrhea; health always good. When she came under his observation she was large, strong, and healthy-looking. For several years there had been an increase in the size of the abdomen, due, she supposed, to fat. A year before the increase in size was much more rapid, and a doctor diagnosticated fibroid tumor of the uterus. There was associated with it a rather large ventral hernia, which began to give trouble in the way of pain and some obstruction of the bowel. The patient came on from Denver and Dr. Wylie removed the tumor, which was estimated to weigh altogether as much as thirty pounds. It was adherent to the omentum, and probably received at this time much of its blood supply from vessels entering it from the omentum. Having tied off the omentum and broad ligament, he lifted the tumor up with the intention of removing it with the uterus, as it was his custom to do in similar

¹ See original article, page 303.

cases ; but he found the tumor had grown downward, extending apparently under the tissues in the floor of the pelvis, lifting and pushing the rectum to one side, and making evident that any attempt at enucleation would be likely to give rise to uncontrollable hemorrhage. He then adopted the method of passing the needle through, applying an *écraseur*, cutting the tumor off, and making a stump. The stump was necessarily very broad, but was comparatively easily managed, and the patient made a good recovery, without elevation of the temperature. The only objection which he had to find with this method of operating was that if an abscess should form at the stump a hernia would almost certainly follow ; or, after a year or more, when complete atrophy of the stump had taken place, the opening left would be occupied by a hernia.

FIBROID TUMOR OF THE OVARY.

DR. WYLIE presented a second specimen with the following history of the case : The patient was the wife of a doctor from the South, was 37 years of age, the mother of two children, no difficulty in labor, menstruation always regular, health good until seven years ago, when she began to suffer from pain low in the left side. Some time afterward she noticed an enlargement in the left side in the region of the ovary. About two years ago she had had a slight attack of peritonitis localized in the same region. Two other attacks had occurred since, a severe one five months prior to the operation. Menstruation had become painful.

On examination Dr. Wylie felt a tumor, considerably larger than a child's head, hard, apparently firmly fixed ; the uterus pushed backward, apparently not much enlarged, although a sound could not be introduced to determine its exact depth. Previously a diagnosis had been made of fibroid tumor of the uterus, and electricity had been recommended, the case being considered a very favorable one for this mode of treatment. When the patient came under Dr. Wylie's care he told her husband that he had made it a rule not to apply electricity in cases of fibroids with a history of attacks of peritonitis, and recommended laparotomy. He opened the abdomen, found that the tumor completely filled the pelvis, that it was firmly adherent to the omentum, intestines, and to all tissues surrounding it. To his surprise, on enucleating the tumor and getting down to the uterus he found this organ quite free. The left tube and ovary were perfectly normal. As well as he could make out, the tumor consisted of the enlarged right ovary with the tube spread over it. He tied off the tumor, making a simple pedicle, put in a drainage tube, and the patient recovered without a temperature.

The tumor had been solid, was dark, was softened and breaking down in places, and had evidently become twisted, strangulated, and given rise to the attacks of peritonitis. Dr. T. Mitchell Prudden examined it, and stated that it was a very rare solid tumor, and expressed the opinion that it must have grown from the uterus and become detached. Dr. Wylie thought it was composed of the right ovary. He thought the case showed that where fibroids were complicated by attacks of peritonitis electricity should not be used. At any rate, this agent would have proven injurious in this case.

COMPLICATIONS OF SALPINGITIS AND OVARIAN ABSCESS.

DR. WYLIE presented his third specimen, and related the history of the case in illustration of a not uncommon complication of salpingitis. The patient was aged 21; menstruation had begun at 12, stopped about six months at the age of 14, otherwise it had been regular. Three years ago she had an abscess in the rectal region which apparently had nothing to do with the genital organs. Last summer she became pregnant, had an abortion which was followed by septic peritonitis, and for several months was confined to bed. She was living in Brooklyn, and the diagnosis was made of large abscess on the left side with probable salpingitis on the right. She was seen by Dr. Skene, and an operation was considered out of the question—why, the speaker did not know. Soon afterward Dr. Wylie saw her, and at that time she still had some peritonitis, but it was beginning to subside. She was sent to his private hospital, but when she reached there the abscess had burst and opened into the rectum. He understood, however, that some attempt had been made to puncture it before, and that some pus had been withdrawn. At any rate, when he saw her in Brooklyn there was a large tumor, whereas when she reached his hospital the tumor had disappeared and pus in large quantity had been discharged through the rectum. The question then was whether to do laparotomy or leave the case alone. He decided, as he had in other instances, to do nothing until the abscess refilled. Abscesses due to a salpingitis nearly always remained collapsed for a time after emptying into the rectum, but finally refilled. An operation was much more satisfactory when it was full than when empty, as it usually afforded an opportunity to drain through the vagina, if thought advisable. That was the step which he usually took, making a counter opening through the vagina, relieving the acute condition, and later, if necessary, doing laparotomy. When the abscess refilled he was unable to find any point which was excessively tender; therefore, having placed the patient under ether, he proceeded to do laparotomy.

He first removed the left tube, which was suppurating only at one point, but was adherent at all points; also the left ovary, which had broken down into an abscess. The right appendages were extensively adherent, and had to be separated from the appendix vermiformis. The latter had suppurated, constituting typhlitis, and was tied off. He then dissected out the remainder of the ovary of the right side as well as he could, and found that the abscess connected with it opened into the rectum low down; that the pus had a fecal odor, showing that it had become mixed with fecal matter. The temperature had been rather high since the operation, yet the patient was doing well, and it was believed she would recover. This was about the fifth case in which he had found it necessary to separate and tie off the vermiform appendix, which was adherent to the diseased tube and ovary.

COMPLICATIONS OF SALPINGITIS; RIGHT TUBE ADHERENT TO URETER.

DR. WYLIE presented the tubes and ovaries in another case illustrative of serious complications of pyo-salpinx. The patient was aged 29; married at the age of 19; had one child at 21; the labor was difficult and prolonged, and she was not able to sit up for three weeks. Since then she had had two miscarriages; the last one, two years ago, was followed by sickness supposed to be peritonitis. The sickness lasted from April until August. In 1888 menstruation was accompanied by greenish-yellow discharge, chill, and great pain. There was, the speaker said, evidently a pelvic abscess somewhere. Menstruation was too frequent and profuse. In September, 1890, the patient came to New York, and was cured by some one for continuous bloody discharge. The bloody discharge stopped, but was followed by prolonged discharge of pus and a severe attack of peritonitis. The attack of peritonitis had been so severe that Dr. Tuttle, who had charge of the patient, did not think it proper to operate, and sent her home.

Dr. Wylie saw the patient at her home in the country, and found that she had been confined to bed since October. She was unable to extend her right leg. There seemed to be an enlargement in the region of the right kidney, and Dr. Wylie supposed there was some complication of this organ. Pus was found in the urine, and the history pointed toward its presence for some time. When she reached New York there was no temperature. Dr. Wylie decided to give ether and make a diagnosis, and, if necessary, open the abdomen. He did open the abdomen, and found the usual adhesions to the omentum and intestines present in severe salpingitis. The

right tube had peculiar attachments; it dipped well down into the pelvis, was adherent, and along the inner border of the adhesions was a tube which was found, on careful examination, to be the right ureter. This was lifted up and found to pass at a much higher location than one would expect of the normally situated ureter. After a time he succeeded in dissecting it loose a distance of full four inches, lifted it, and removed the diseased tube and ovary. The ovary contained an abscess and lay rolled underneath the broad ligament. The patient made a perfectly satisfactory recovery. She could now move the leg much better than before the operation.

Dr. Wylie said this was the third case in which he had found the ureter thus situated. In one an abscess had burst and discharged into the right ureter, whence the pus found its way into the bladder and out through the urethra.

RIGHT TUBAL PREGNANCY FOLLOWING REMOVAL OF ONE TUBE AND OVARY.

The fifth specimen presented by DR. WYLIE was accompanied by the following history: A young woman came to him about a year ago to be treated for sterility. She gave a history of having had some treatment and of an attack of peritonitis in San Francisco. On examination Dr. Wylie found a large indurated mass on the left side in the region of the tube and ovary. When she was seen next, she had a temperature and a severe attack of local peritonitis. Dr. Wylie operated when the temperature was 103° to 104° F., and removed from the left side a large pelvic abscess which was composed mainly of the tube and ovary of that side. The right appendages were free from adhesions, seemed normal, and were not removed. He saw the patient again a few times during the summer. In the fall he dilated the cervix and gave intra-uterine treatment. In October she missed a period and had all the symptoms of pregnancy. There was only a slight show in November. The signs of pregnancy continued until the end of the second month, when she had rather severe pains, a watery discharge, then a bloody discharge. On the fourth or fifth day the temperature rose and a well-formed membrane came away. The fetus was looked for, but not found. The temperature was irregular, but went up nearly every day and was associated with some cough. It was a question whether she had phthisis or what might be the cause of the temperature. On examination Dr. Wylie found a small tumor to the right of the uterus, about the size of his thumb. During the next ten days or more it increased pretty rapidly in size. About a week ago, which was about the third month from the cessa-

tion of menstruation, having made up his mind that it was a case of tubal pregnancy, he decided to operate. Dr. Thomas saw the patient and confirmed the diagnosis. The temperature was continuing to run up nearly every afternoon to 103° or 104° F. On opening the abdomen he found the right tube enlarged and adherent in the lower part of the pelvis. He lifted it, tied it, and, when about to take it out, a small fetus slipped out of the tube through the sac which had already ruptured. Except that the fetus was found, the case did not differ from many which he had in the past looked upon as hemato-salpinx.

DR. P. F. MUNDÉ took exception to Dr. Wylie's statement that electricity was contra-indicated for fibroids of the uterus in cases where there was a history of peritonitis. If the peritonitis had subsided he could see no reason why galvanism should not be employed. He at present had a patient in his private hospital who had had a severe attack of peritonitis two months ago. He had now given her two treatments by galvano-puncture for fibroid of the uterus, with at least no ill result.

DR. WYLIE stated further that the fetus in the case related had probably been dead some days before he operated, that it was in a partially broken-down condition, and rupture of some of the vessels must have taken place when he examined the patient before the operation, for he found a handful of fresh blood evidently of recent extravasation. He did not doubt but what extra-uterine pregnancy was much more common than it was supposed to be a few years ago, and it was his belief that many cases of pyo-salpinx had their origin in tubal pregnancy. It was very likely that this was the cause of the first abscess in the case under discussion.

DR. HANKS thought Dr. Wylie was quite correct in the statement that extra-uterine pregnancy was much more frequent than we had any conception of five or eight years ago. He had reached that conclusion from the condition seen in cases at operations, and which some years ago would have been regarded as hemato-salpinx.

DR. H. C. COE said he was unable to understand why pathologists disliked to admit the occurrence of ovarian fibroids. For himself, he believed that most of the so-called detached subperitoneal fibroids of the uterus were really fibroids of the ovary. He remembered having seen only one case known to be one of detached fibroid which had become adherent to the ovary. It occurred in the service of Dr. Emmet. He hoped the specimen presented by Dr. Wylie would be examined by the pathologist of the Society.

MODIFICATION OF LUSK'S CEPHALOTRIBE.

DR. H. C. COE exhibited an instrument similar to Lusk's, with the following modifications: The cephalic curve, measuring from the outer surfaces of the blades, is two inches instead of two and a half; the pelvic curve is the same. Instead of being broad and flat, the shanks are narrow and rounded, as in Braun's cranioclast, with a lock similar to that of the latter instrument. The handle is the same as that of Simpson's forceps, and the screw is detachable, which is not the case with Lusk's cephalotribe. In its present form the instrument seems to fulfil more perfectly its proper function as a craniotractor. Dr. Coe explained that he had had it made simply to meet a need which had arisen in his own experience, in certain cases in which, after perforating the head, he had been unable to obtain a sufficiently firm grasp with the cranioclast to prevent it from tearing out when strong traction was made. Of course the cranioclast was capable of



wider application than the cephalotribe, yet it would occasionally happen that the latter would prove invaluable.

PECULIAR CONGENITAL DEFORMITY.

DR. H. C. COE presented the photograph of a male infant born two months before at the New York Maternity Hospital during his term of service. He had hoped to be able to exhibit the original, but had been prevented from doing so. There was nothing peculiar about the history of the case except that the mother, when in the fourth month of pregnancy, had been greatly alarmed by a cat which jumped upon her as she lay in bed. The circumstance made quite an impression on her mind, so that she feared that the child might be affected. Like many of the cases of so-called "maternal impressions," her deductions may have been of the *post hoc* order. Labor was normal; vertex presentation; spontaneous delivery. At birth the child was healthy, of average weight, and presented the following deformities: Head of normal size and shape; eyes somewhat protruding, with a peculiar stare; both arms adducted and crossed; the hands perfect, but strongly flexed; on making extension it was evident that

there was a spastic contraction; thighs partly flexed and abducted, but could be readily restored to their normal position; ankylosis of both knee joints; the right leg was between two and three inches shorter than the left, the foot presenting an extreme equino-varus; there were no toes on the left foot, but only a row of tiny nodules to represent them; there was a large scrotal hernia on the right side. It is hoped that a thorough study of the case can be made later.

DR. MUNDÉ said that in 1873 he wrote one of the first articles which was published in this country on Braun's cranioclast. He still adhered to the opinion then expressed, that it possessed advantages over the cephalotribe. Now and then he was called in consultation to cases in which he had to do craniotomy, and in extracting the head he could not see the advantage of an instrument both blades of which were on the



outside of the cranium, and which therefore took up an unnecessary amount of room.

DR. LUSK expressed interest in the tractors which Dr. Coe had added to the instrument which bore his name. He believed the lock offered a decided improvement. As bearing on the remarks of Dr. Mundé, he said that in all cases of extreme narrowing of the pelvis he also preferred the cranioclast, but in cases of moderate contraction he felt that the cephalotribe was preferable, in that it offered better traction. It had succeeded in his hands in some cases where Braun's cranioclast had failed. The objections which had been offered to the cephalotribe fell to the ground in cases where the pelvis possessed moderate dimensions.

DR. MUNDÉ would modify his statement by saying that where it was not possible to grasp the face and front part of the head with the cranioclast, he thought the cephalotribe

would probably be safer—less likely to tear out. But where it was possible to put the cranioclast over the face, it seemed to him the preferable instrument.

DR. COE said he agreed with Dr. Lusk. He had had two cases in which the cranioclast had torn out.

DR. HANCE, having seen the child whose picture Dr. Coe had shown, said it seemed to him that the condition of the upper extremities was due to some central lesion. There was distinct spastic contraction in the upper extremities, but the difficulty in the lower extremities had impressed him as being more of an orthopedic nature. Both knee and one hip joint were ankylosed to a degree markedly limiting motion. He thought the position of the child in utero had much to do with the trouble in the lower extremities. He had tried to learn whether there had been a very limited amount of liquor amnii, but the amount had not been noted.

THREE CASES OF FIBROUS POLYPI OF THE UTERUS.

DR. P. F. MUNDÉ presented specimens from several cases on which he had operated recently. The first case was that of a virgin, age 44, whom he saw in consultation a few weeks since in Harlem. She had been endeavoring for three weeks, under most severe pains, to deliver herself of a uterine polypus. Dr. Mundé found the hymen present, the vagina small, and at the operation at his private hospital it was necessary to incise the perineum down to the sphincter ani, whereupon he was able to introduce the ordinary obstetrical forceps and extract the tumor as he would the fetal head. He then sewed up the perineum, which healed promptly. He had removed several polypi larger than the one presented, but never before in a virgin and in whom it was necessary to cut the perineum so deeply.

DR. MUNDÉ presented still another uterine fibrous polypus, removed from a patient at his hospital that afternoon; still another smaller one was shown, removed during the same afternoon at the patient's house—the hemorrhage from both of which had caused intense anemia.

INTRALIGAMENTOUS CYST OF THE OVARY.

DR. MUNDÉ's next specimen belonged to a case of intraligamentous cyst of the ovary, in the removal of which it proved necessary to take away the larger portion of the uterus. He had now operated on seventeen cases of intraligamentous cysts of the ovary, and had found them among the most difficult cases to deal with, owing largely to the ease with which the sac was torn during attempted enucleation, and thus septic infection made possible. Out of the seventeen cases, five had died, but it was only fair to say that recently he had lost none.

This patient was 63 years of age, came to his private hospital from New Jersey some weeks ago, and on examination Dr. Mundé found a large abdominal tumor. It extended so deep behind the cervix that he suspected it was intraligamentous. He operated about two weeks later, in spite of the fact that there was edema of one leg, evidently due to a phlebitis of the femoral vein of that side. His diagnosis proved correct: the tumor was an intraligamentous cyst of the left ovary. It was impossible to remove the whole of the tumor, and he was obliged to stitch the remainder into the wound. In cutting off one side of the cyst, it proved necessary to take with it the uterus above the internal os, as it was impossible to detach it. The remainder of the uterus formed a part of the sac which was stitched into the wound. The cavity was packed with iodoform gauze. The patient was making an uninterrupted recovery. The stump had not separated. The edema of the leg had disappeared. He had before had some difficult cases, but had always been able to remove the sac without involving the uterus. In several he had been able to use the broad ligament in bulk as the pedicle, but only exceptionally and where the cyst was small. [This patient recovered perfectly, the cervix sloughing away entirely.]

PYO-SALPINX.

DR. MUNDÉ presented another specimen, consisting of a large tube containing pus, with the ovary, removed two weeks ago. Six months before he had operated on the patient for laceration of the cervix, which was supposed to be the cause of diffuse pelvic pains. At that time he could find no evidences, on palpation, of disease of the tubes or ovaries. A month ago, however, when the patient returned and complained of renewed pains, he felt a fluctuating tumor, and on aspiration per vaginam withdrew pus. Laparotomy was performed and the tube was removed. It was distended to an unusual degree, according to his observation. The other ovary and tube, being adherent, were also removed.

ABSCCESS OF THE OVARY.

DR. MUNDÉ presented another specimen, which in his own experience was the more common form of disease of the uterine appendages, namely, abscess of the ovary. Twenty-two years ago, when he was assistant to Prof. Scanzoni, he had a case of abscess of the ovary in a puerperal woman in the Maternity Hospital at Würzburg, but the diagnosis was not made until after death, which took place suddenly of peritonitis. The post-mortem showed an ovarian abscess which had ruptured and excited the peritonitis. Prof. Scanzoni then said that it was very unusual to have abscess of the ovary, except as a result of the puerperal state. That opinion was expressed

in most text books of to-day, but Dr. Mundé did not agree with it. Among his laparatomies he had had eight cases of abscess of the ovary not connected with the puerperal state. Of these, five were double, three single. The tube was more or less involved in all the cases. The patients all recovered. He was satisfied that in some of the cases in which he had made a diagnosis of pyo-salpinx and drained, successfully too, per vaginam, the real condition was an abscess of the ovary. He did not know that the two conditions could be differentiated positively until during laparotomy.

DR. LUSK said he had not thought much about the point just raised by Dr. Mundé, but would state that only a few weeks ago he presented a case at his clinic which turned out to be one of abscess of the ovary not connected with childbed or its sequelæ.

DR. COE remarked, as to the frequency of non-puerperal abscesses of the ovary, that he had seen several cases at the Woman's Hospital. He had been impressed by the fact that, at autopsies for acute septic peritonitis following operations on the cervix, it was not at all uncommon to find an abscess of the ovary. Last summer a patient of Dr. Cleveland's came under his treatment, a strong, healthy woman, who, just before her menstrual period, got up in the night and went about in her bare feet. Next day she had a chill and developed the ordinary symptoms of dysentery. The following day she had general peritonitis. The third day Dr. Coe opened the abdomen, and at first supposed he had removed the diseased vermiform appendix, but it proved to be an abscess of the ovary which had ruptured into the bowel in that short time. The patient died a few hours afterward with a temperature of 109° F. in the axilla, showing the extremely virulent nature of the process. She denied having had any pelvic trouble before, except that she had been curetted for endometritis two years previously. Dr. Coe added that there was a direct connection between the lymphatics of the body of the uterus and of the ovary, while there was no such direct connection between the tube and ovary. Therefore one might expect a septic process to be transmitted from the uterus to the ovary.

DR. WYLIE thought it difficult to distinguish between cases of abscess of the ovary and those of pyo-salpinx, for it was very common to find disease of the ovary connected with pyo-salpinx. This was true of two of the cases which he had related during the evening. He believed that cases of pyo-salpinx requiring an operation, or those forming a pelvic abscess, were nearly always the result of septic trouble after labor or abortion. Take the several hundred cases operated upon during the past five or six years, and he thought the trouble could be traced, in more than fifty per cent of them,

to labor or abortion—more, probably, to abortion proportionately. While gonorrhea might cause pyo-salpinx, yet it did so far less frequently, in proportion to septic influences after labor and abortion, than had been taught by Dr. Noeggerath or even Dr. Emmet.

DR. H. T. HANKS said he thought there was no difference of opinion as to the fact that if a tumor were found, after the puerperal state, about the uterus, tube, or ovary, it, as a rule, contained pus. This fact had been impressed upon him at operations the past two years. Regarding the point raised by Dr. Mundé, he then recalled four cases in which he found pus in patients who had not been confined or had an abortion for months or years. Yet where fluid was found in the puerperal state it was generally pus. He saw no reason why an abscess of the ovary might not exist independently of pus in the tube, and *vice versa*.

MODIFIED SELF-RETAINING SPECULUM.

DR. CLEMENT CLEVELAND presented the self-retaining speculum which he had devised some years ago, in a modified form. The older instrument had been made of two sizes, the smaller for examinations, the larger for operations. The smaller was seldom used, and the blades of the larger he had found somewhat too long, interfering with operations on the cervix. Therefore he had shortened the blades; and in order to prevent the instrument from slipping out owing to this change, he had placed a bulbous projection on the under surface of the blade which grasped the perineum, and a corresponding depression on the other side, which permitted freer manipulation than when the blade was straight.

DR. I. H. HANCE then read the paper of the evening.

AN INFREQUENT FORM OF PUERPERAL INFECTION.¹

DR. MUNDÉ said he had always regarded the three chief locations for septic infection in the puerperal state to be, first, the placental site; second, the cervix; third, the vagina and perineum. In the majority of cases seen by him in consultation, the infection came from the placental site. In such cases he usually found that the body of the uterus had not contracted well, and that coagula had adhered to the rough placental site and become decomposed; or there had been a localized inflammatory process at that point, a septic endometritis, with decomposition of the thrombi, from which the infection sprang. But there were some cases in which infection took place at the lacerated cervix, still fewer in which it took place from a laceration of the vagina or perineum. He

¹ See original article, page 288.

thought there could be no question of the propriety of treating the cervix and attempting to stop further infection when other sources for the infection could not be found. Carbolic acid, or a solution of iodoform in ether, might be applied, and the iodoform pencil be introduced. He did not agree with the reader of the paper that the cervix was an uncommon source of infection, although it was far less frequent than the placental site.

DR. A. H. BUCKMASTER referred to a case in which there was considerable temperature and evident septic infection, with laceration of the cervix. Other treatment proving unavailing, he applied pure carbolic acid to the entire inner surface of the uterus, closed the laceration, after which the temperature fell and remained normal. The same treatment proved successful in another case where douches had failed. He did not think the source of the infection could be determined by the effect of the intra uterine douche. This might have no effect, yet the source of the infection be within the uterus.

DR. J. H. FRUITNIGHT thought it well to call the attention of the general practitioner to the fact that the lacerated cervix was sometimes, though infrequently, the source of septic infection.

DR. COE said it had been his custom at the Maternity Hospital, and also in private practice, to use the vaginal douche in cases in which he knew there was a laceration. In several bad high-forceps cases with extensive laceration, this method, he was convinced, had prevented sepsis. He agreed with Dr. Mundé that the cervix was not a very infrequent source of septic infection, but it was sometimes extremely difficult to locate the seat of infection, and, for this reason, to decide on what course of treatment to adopt. One might, for instance, be relying on washing out the uterus when the infectious trouble had already extended to the tubes.

DR. HANKS thought the author had brought an important subject before the Society. We were all in doubt, in some cases, where the sepsis had entered the circulation. He thought Dr. Lusk would recall the case of a primipara in which the speaker and his assistant had found it necessary to give hypodermic injections of ergot and ammonia because of severe flooding. On the second day the temperature rose rapidly to 105° , but within twelve hours fell to 97° . The consultant thought the sepsis had entered the torn cervix, although Dr. Hanks felt certain that there could be no great tear of this tissue. The temperature oscillated between high and low for three or four days, when they discovered an abscess on the thigh where one of the injections had been made. On opening the abscess the patient improved rapidly. He knew of other cases which had ended fatally, and the physician still

remained in the dark concerning the point of entrance of the infection. Where laceration of the cervix existed alone, it was fair to suppose that that was the point of entrance. He was called to a case in consultation a few days before in which the physicians who had seen the woman expected a burial soon. He found a swelling over the right broad ligament, and thought it might contain pus, but puncture failed to verify the supposition. The uterus was then thoroughly curetted, two tablespoonfuls of débris were removed, it was washed out thoroughly, and the patient began to recover. Six or eight days later an abscess developed in an inguinal gland and was opened.

DR. A. P. DUDLEY wished, with the others who had spoken, to emphasize the fact that the lacerated cervix was not an infrequent source of infection. He agreed with Dr. Mundé that sepsis arose most frequently from the site of the placenta, but believed that the point at which it entered the circulation was most frequently at the internal os. He believed that if careful digital examination were made in cases of puerperal sepsis, a tear would often be found which extended to the internal os and opened up the lymphatics and veins which communicated with the broad ligament. Those who had operated for lacerations of the cervix had found scar tissue at this junction which could only have arisen from a direct lesion. Treatment should go beyond that point. The uterus should be thoroughly cleansed and then touched with a caustic. The lesion situated at the junction of the broad ligament, as just described, should also be touched, and one or two stitches introduced. Dr. Dudley also spoke of the frequency of septic material being carried in from without during examinations. Puerperal fever was so common in a maternity ward at one time that he forbade the nurse making any examination in the waiting room. They had no more cases of puerperal fever during the term, of three months. Where sepsis existed and it was necessary to cleanse the uterus, the curette was not sufficient; one must introduce the finger. The speaker thought lacerations in all degrees were liable to be the source of infection—smaller ones even more likely than the larger, because hemorrhage from the latter swept away septic matter. They should be sewed up.

DR. LUSK said he had been somewhat horrified by Dr. Mundé's remark that, from his experience in consultation practice, he believed the point of infection, with rare exceptions, was from the placental site and from the uterine cavity. If there was anything in which the speaker firmly believed, it was that the uterine cavity was never infected—never except from improper conduct on the part of the accoucheur. "If I leave a portion of the placenta behind, if it has become

decomposed, or if lochia decompose in the uterine cavity and the woman dies, I know to a certainty I am the woman's murderer. And I wish every practitioner of medicine would feel the same way." In the ordinary conduct of labor the physician did not infect the uterine cavity, and this cavity could never be infected except from below. When the infection began below there was a lapse of time before it reached the uterine cavity. But if it began in the uterus it was because the accoucheur did not properly conduct his case, and did not understand the principles of the practice of obstetrics.

If sepsis occurred at all, he believed that it occurred in the great majority of cases from the cervix, for he took it for granted that most practitioners were so careful in conducting labor that they did not infect the uterine cavity. He also spoke very favorably of the pad introduced by Dr. Garrigues.

DR. W. M. POLK made some remarks upon the management of puerperal sepsis. He believed in drainage in cases of this kind, applied on the same principle that one applied it in general or abdominal surgery. Take a case like the one mentioned by Dr. Hanks. If the temperature did not go down after washing out the uterus, he would proceed to curette thoroughly, using the sharp curette, then wash out the cavity and introduce a drain consisting of iodoform gauze. Under this procedure he expected his patients, seen in consultation, to continue to get well, as they had done in the past. It was imperative, he thought, that the genital tract should be drained in these cases as thoroughly as any other canal or sinus the seat of sepsis.

DR. WATHEN, of Louisville (present by invitation), said he had seen no cases of septic infection in obstetrical cases except in consultation. He did not believe infection would take place where the accoucheur observed strict cleanliness. It would not arise from a tear of the tissues, unless the infective agent were introduced from without. Indirectly antiseptic agents were to blame, for in placing confidence in them some physicians had become careless about cleanliness. Antisepsis without cleanliness would not prevent infection.

DR. MUNDÉ could not agree with Dr. Lusk that the cervix was the usual site of septic infection. Cases were not infrequently seen which refused to yield to treatment until the uterus had been curetted and irrigated, bringing away a mass of material which might or might not have a foul odor. Dr. Lusk must not forget that the general practitioner is exposed to all kinds of infection, and that many physicians habitually have their "finger nails in mourning." And in the practice of such obstetricians an infection of the uterine cavity is surely nothing to be surprised at. If the rule were observed to invariably wash and disinfect the hands *before* as well as

after a vaginal examination, infection would be practically absent. However, we must not forget that in addition the genital canal, for the first few days after parturition, is more or less patulous and exposed to the atmosphere. Hence the aseptic vulvar pad and its great success in preventing infection.

DR. A. P. DUDLEY thought something more was necessary to give rise to puerperal sepsis than the mere introduction into the vagina and genital tract of uncleanly material, else septic infection would occur much more frequently. Doubtless many physicians attended obstetrical cases without washing their hands.

DR. HANCE, in closing the discussion, expressed the belief that some one coming in contact with the lying-in woman introduced the septic material when infection developed. The point which he desired to bring out in his paper was that in some instances the entrance was at the lacerated cervix, and that there the effect might remain localized. He believed the vaginal douche after labor was called for only on special occasions. Regarding the advisability of sewing up lacerations of the cervix immediately, he had seen very few cases which could have called for it. He had done the immediate operation only once, and then simply to control hemorrhage. If one suspected laceration, the vaginal douche would have a favorable influence and tend to diminish the size of the wound.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, November 21st, 1890.

The President, DR. W. W. JAGGARD, in the Chair.

EXHIBITION OF SPECIMENS.—I. EXTRA-UTERINE PREGNANCY.

DR. C. T. PARKES.—The first specimen I have to show is that of an extra-uterine pregnancy of three months' standing—that is, the history goes back to three months and the symptoms of rupture to three weeks. As I pass it about you will see the umbilical cord, the feet, the body, and the head partially embedded in this large clot of blood. It is a very interesting case, in that it shows so perfectly the entire fetus. The operation was done three days ago, and of course it is not right that I should say anything about what will be the result in this

case, but so far there has not been a temperature exceeding 99°. This afternoon I removed a part of the gauze packing which was placed in the wound to control hemorrhage. Here is a remnant of the sac in which the blood clot was contained that to me is quite interesting, because it lined the floor of the pelvis, and I peeled it out subsequent to the removal of the blood clot. It was evidently a rupture of a Fallopian pregnancy, the weakest part of which was close to the broad ligament. Here rupture occurred, and the bleeding took place into the broad ligament; therefore it was circumscribed so far as the amount of blood lost was concerned, but it was large enough to fill up the entire pelvis and displace the uterus to the opposite side and upon the brim of the pelvis. The rupture occurred in the left Fallopian tube. An incision was made to uncover it, and this mass was found embedded in adhesions to the large and small intestines posteriorly and superiorly; these adhesions were found to be recent and very vascular. I attempted to separate them, but found I should not be able to get through without a hemorrhage that would complicate the case very much, so I resorted to the plan of laying open the broad ligament over the mass. By that means I was able to get my finger in between the folds of the broad ligament and turn this mass out without dividing any vessels that bled severely, and without interfering with the adhesions. I then packed this cavity by putting a single layer of iodoform gauze at the bottom of the cavity, opening the top of it, and filling the cavity with ordinary gauze, in that way making pressure which prevented all oozing. To-day I removed a part of the packing. I could not sew the broad ligament to the margins of the incision, on account of absence of any sac wall and the proximity of the intestines on the posterior surface to the margin of the opening; it would scarcely have been possible to have done it without unnecessarily prolonging the operation, and not accomplishing much if anything if it had been done.¹

II. FIBROID TUMORS.

The other cases which I have to show you are subperitoneal fibroid tumors. They had only a very small attachment to the uterus, such as is usual in subperitoneal tumors. When first taken out one tumor weighed forty pounds exactly, and the only attachment there was to the uterus was a rather thick and broad mass which extended downward into the right broad ligament and grew from the right side of the body of the uterus into the broad ligament, and then the tumor carried the broad ligament and tissues up on top of it. It is interesting for an-

¹ Patient well December 8th, 1890.

other reason: this lady carried the tumor five or six years, and for the last two years she has been treated by the application of electricity, without this treatment interfering at all in the increase of the growth of the tumor. We would hardly expect that the application of electricity to a subperitoneal tumor would have as much effect as if it were intramural. I was able to remove this tumor without interfering with the ovaries or uterine body. I simply detached it from its broad ligament. The patient recovered.

The second tumor was attached in the same way to the posterior surface of the uterus. The uterus, the ovaries, and broad ligaments were perfectly normal. This surface of separation is spread out a good deal because, in order to get a pedicle to control, I went up a slight distance on the wall of the tumor. The tumor weighs about fifteen pounds, and is made up entirely of fibrous tissue. It filled the abdomen of the woman, who had never been pregnant. It went up towards the sternum, and the narrow portion of the tumor lay on the abdominal aorta and was pressed against it by the undistended abdominal wall, so that when palpation was made it seemed certain that the abdominal aorta was displaced in a circular manner around the edges of the tumor; it gave this impression so strongly that I was inclined to believe the tumor postperitoneal. When I first made the incision through the abdominal walls I saw these glistening lines; they are so regular that they appear very much like intestines stretched over the surface, so I was in doubt as to whether it was in the peritoneum or behind it. Getting my fingers down into the pelvis, I found the uterus, ovaries, and broad ligament normal, but finally I came upon the attachment to the uterine wall. The tumor was then turned out and the pedicle seized with the forceps and cut away. These are interesting cases, in that they have reached such a size with only a small pedicle to nourish them; interesting, again, because they have been subjected to electricity, which produced no influence upon them whatever.

This patient has a half-dozen or more scars over the surface of the abdomen, made by electricity, so the treatment was by puncture in some way.

DISCUSSION.

DR. W. W. JAGGARD.—I would like to ask two questions of Dr. Parkes: First, What were the symptoms of the extra-uterine pregnancy? and second, Was the diagnosis made before the operation? Concerning the fibroids, I think, to get anything like an intelligent idea of Apostoli's method, we ought to know who the operator was, and whether the case

has been recorded, and particularly whether it has been recorded as a cure.

DR. PARKES.—I will say that extra-uterine pregnancy was suspected before the operation. The symptoms leading to the necessity of operation were the presence of the tumor, history of the case, and condition of the patient—not exhaustion from bleeding, but fever from apparent commencement of infection. The question about the electrical treatment I cannot answer, as I have had no experience with it whatever.

DR. MARTIN.—I would like to ask Dr. Parkes in what manner he secured the pedicle in the second case.

DR. PARKES.—I secured it temporarily with a long pair of forceps, and then divided it into three segments and ligated it; then I cauterized the surface of the stump thoroughly, so as to make a perfectly smooth, even eschar over the surface—that is, treating the surface without any destruction of carbonized tissue—and then it was dropped.

DR. MARTIN.—I would ask, in regard to the first case, whether it was possible to determine with any degree of accuracy the fact that the tumor was subperitoneal and that the uterus was simply natural or normal size.

DR. PARKES.—It could not be determined.

DR. MARTIN.—I ask that question because the case had been treated by electricity. It is a fact that, unless a galvano-cautery is used in treating these cases, it is almost impossible to effect any relief whatever. As a rule, in these cases there would not be excessive hemorrhage. Unless the case was treated by galvano-cautery according to the radical method of Apostoli, we could not expect to get any effect. The probability was that it was treated by intra-uterine or vaginal application, which would not allow of the electricity coming in contact with the tumor with sufficient density to produce appreciable effect.

DR. PARKES.—I would like to ask if the use of galvano-puncture means an eschar left on the skin?

DR. MARTIN.—The old method of puncture—Cutter's method—through the abdominal walls is not now practised by those who treat these cases after Apostoli. If the puncture cannot be made from the vagina, it is not made. The eschar left on the skin was undoubtedly the result of an improper form of abdominal electrode.

CANCEROUS UTERUS.

DR. F. H. MARTIN.—I have a couple of very interesting specimens here. The first one is interesting to me because it helps to carry out the idea incorporated in a paper that I read at the Nashville meeting of this year, which received a

very spirited discussion. It was on the subject of vaginal hysterectomy. The proposition that paper was based upon was something like this: Vaginal hysterectomy is the most justifiable surgical procedure we yet know of for the cure of cancer of the uterus. The case I wish to report illustrates the truth of one argument presented in support of the above proposition, namely, that vaginal hysterectomy will enable one to go beyond the diseased tissue in a greater proportion of cases than with any other operation. There has been much discussion in regard to the relative value of the two operations, high amputation and complete extirpation. Those who take the former ground would naturally have performed high amputation in this first case, because apparently the cervix only was involved. They would, however, have been deceived. The specimen was given to Dr. Wing, and he discovered that the cancer extended to within two lines of the fundus, traversing the tumor to this point by way of the mucous membrane of the uterus. If high amputation had been done in this case, the woman would have long since been dead, whereas she is now in perfect health after eighteen months.

FIBROID UTERUS REMOVED PER VAGINAM.

The second specimen I have to show is a fibroid uterus removed by the vagina in August of this year. The case was sent to me by Dr. Priestman, of Neponset, Ill., for electrical treatment on account of excessive hemorrhage. I rather hesitated in applying the treatment, as the symptoms were of a malignant character, so I advised the doctor to have a vaginal hysterectomy performed. However, electricity was thoroughly tried, and the case grew rapidly worse until she was almost exsanguinated, when vaginal hysterectomy was decided upon and done at the Woman's Hospital in August of this year. The woman recovered from the operation. After removing the uterus and incising it we found the reason why electricity did not cure the hemorrhage. Projecting into the uterine cavity was a small fibroid, which it was impossible to cauterize with the intra-uterine electrode, and which interfered with the proper cauterization of the other portion of the mucous membrane of the uterus.

Possibly the case would have been favorable for ergot. If I am not mistaken, ergot was used in large quantity for some time, and if it had been persisted in the case might have been cured in that way.

OVARIAN ABSCESS.

DR. KARL SANDBERG.—The first specimen I have to present is a large-sized ovarian abscess. The history of the case was that of a lady married several years, never pregnant; she

had been suffering for years from attacks of severe pain in the left ovarian region, and was taken down with pelvic inflammation in the left side. She was sick for quite a while and then got up again. I saw her about a month afterward and found this tumor in the left side of the pelvis. She had a temperature of 102° . She was advised to have an operation performed, but refused and was treated by a gynecologist of this city for a couple of months. During that time there was some discharge of pus from the rectum, which relieved her for a short time; but, her pains returning again, she was in such a miserable condition that she finally consented to the operation. It was found that in addition to this tumor there was an abscess between the rectum and the vagina in the cul-de-sac of Douglas. The first thing done was to make an incision from the vagina into this abscess, drain it, and wash it out daily. It closed up inside of three weeks, and she went home with normal temperature. At the next menstruation her temperature went up, and she was again admitted to the hospital, when laparotomy was performed and this tumor removed. Behind the tumor was a collection of four or five ounces of serous fluid. She made a good recovery and has been well since.

SUPPOSED PAPILLOMA OF OVARY.

The second specimen is from a young girl about 18 years old who had suffered since childhood with pain in the right ovarian region. When 12 years old she had an attack of scarlet fever, and she dates her trouble from that. Two or three years afterward she had what she called inflammation of the bowels, with pain in the right side, and since that time she has now and then suffered with pain in that side, with elevation of temperature. That was her condition when I saw her two or three months ago; the right ovary was enlarged to the size of a small egg, tender and movable. I advised the removal of that ovary as the only sure cure, and after some hesitation she consented. The ovary ruptured during the removal and some soft matter escaped; it appeared like proliferating granulations—there did not seem to be any fluid in it whatever. She made a good recovery. This specimen was submitted to a pathologist for examination, but was returned without any diagnosis. The only diagnosis I can make is papilloma of the ovary without any fluid collection.

REMOVAL OF OVARY AND TUBE.

The third specimen is a tube and ovary that do not appear very abnormal, and it may seem that it might have been just as well to leave it where it was. The history of the case may explain the removal. The lady was confined some nine or

ten months before the operation, and had been sick in bed ever since. By examination the uterus was found not enlarged and in a normal position, but back of the same could be felt a large tumor about three and one-half inches long and two and one-half inches broad, with the longest diameter up and down, and a cord could be felt running from the right side of the uterus toward this mass. The lower part of the mass was extremely tender, and it was supposed at the time that the middle of the mass constituted a pyo-salpinx which had caused her all this trouble and still kept up irritation enough to explain her sufferings. She submitted to an operation, and this tube and ovary were shelled out from the centre of the mass. There did not seem to be any pus in it, and I thought for a minute of leaving it inside of the abdominal cavity; but, considering all the mischief it had done already, I thought it more prudent to remove it. She made a good recovery, but left the hospital while I was away from the city, and I have not been able to trace her since. I should have been interested in ascertaining how far the mass had disappeared.

SALPINGOTOMY.

The fourth specimen is a pyo-salpinx removed three weeks ago. This was another puerperal case. The patient, a girl, was delivered at the County Poorhouse three or four months before the operation, and had been sick ever since. She was well enough to go home for a while, but was not able to do anything, and came into the County Hospital in a miserable condition, with extreme suffering and a temperature running sometimes above 103° , and with her mind seriously affected. She acted very queerly at all times, and there was but one opinion in the ward about her being insane. I was successful in removing this mass whole. You can see the tube twisted upon itself, with the fimbriated extremity firmly adherent to the ovary, and with the same forming a cavity full of pus. There is no doubt about there being pus there, because at the time of operation pus came oozing out of the small lumen of the tube where it was cut off. She made a good recovery, and what is not the least interesting part of the history is that her mental condition has improved remarkably. In fact, from the time she woke up after the operation she has shown no sign whatever of insanity.

DR. HENRY P. NEWMAN read a paper on

THE REMOTE RESULTS OF SHORTENING THE ROUND LIGAMENTS
FOR UTERINE DISPLACEMENTS BY THE DIRECT METHOD.¹

DR. A. W. ABBOTT (of Minneapolis, Minn.)—In making up

¹ See original article, page 257.

our minds about any operation we ought not to be too enthusiastic over it because it is theoretically good, nor should we laugh an operation down until sufficient time has elapsed and we have given it a practical trial. I had, previous to November, 1888, operated upon twenty cases. Nineteen of these I have the history of and can give you my experience in reference to them. I assure you, gentlemen, that these statistics are absolutely correct, so far as I can make them. There is no prejudice about it one way or the other; I give you the facts just as the cases stand to-day. I will not weary you with any detail of the cases, but just give a summary of some few points in reference to them. There were nineteen of the cases operated on up to November, 1888, which would make them all over two years old. I would say that these operations were all made, not for prolapse, but for retroflexion of the uterus. I followed Dr. Alexander's method as closely as possible in all these operations. I had no difficulty whatever in doing the operation in any case. I have never found a case in which the ligaments were lacking, and never found a case in which there was anything of the trouble which has been described by some in doing the operation. If Dr. Alexander's method is followed implicitly, I think the operation is simple and easy; and at the same time I think Dr. Newman's ideas are correct, and should be inclined to think his operation a good modification, for the reasons he gives. Out of these 19 cases there are 13 in which the position remains normal to-day or when last seen, and out of these 13 cases 11 have improved and 2 have not improved; so that out of the 13 cases which are anatomically successful, there are therapeutically 2 which are not successful. Of those in which the position is not improved—namely, 6—in 3 the symptoms are improved. Of the total number of operations, the symptoms have entirely disappeared in 10, in 4 they are improved, and in 5 there is no change.

There is a point that I have not seen mentioned in reference to this operation, but which seems to have its influence—that is, as to whether the women have borne children or not. I find in these cases that 4 of the women who had borne children were not improved and 6 were improved, and of those who had not borne children 8 were improved and 1 was not improved. Of the reasons for lack of improvement in some of these cases, there were adhesions in 3 cases, and, of course, the operation should not have been done. They were among my early cases, and I did not realize fully the importance of that point. In one of the cases which did not improve, the tubes and ovaries were subsequently removed at Montreal, but without improving the patient, and it remains a question to this day what the cause of her suffering is. In one of my

ALEXANDER'S OPERATION FOR SHORTENING THE ROUND LIGAMENTS, WITH RESULTS AFTER TWO YEARS. (ABBOTT.)

No.	Name.	Age.	Parous or not.	Date of Operation.	Results as to		Remarks.
					Position of Uterus.	Relief of Symptoms.	
1	Mrs. J.	42	Yes.	September 18th, 1886.	Retroflexed.	Not improved.	No apparent reason for failure. Pain in region of round ligaments at times.
2	Miss R.	22	No.	February 16th, 1887.	Normal.	Perfect.	
3	Mrs. R.	35	Yes.	February 26th, 1887.	Normal.	Perfect.	Counted as a good result.
4	Mrs. C.	32	Yes.	March 6th, 1887.	Normal until next pregnancy. Retroverted since.	Perfect while uterus remained in position.	
5	Mrs. B.	30	Yes.	March 12th, 1887.	Normal 2 years.	Perfect. Had child since.	Adhesions. Adhesions.
6	Mrs. P.	26	Yes.	April 15th, 1887.	Normal 1 year.	Perfect while observed.	
7	Mrs. T.	24	No.	April 26th, 1887.	Retroflexion and partial retroversion.	Improved.	Pendulous ovaries.
8	Mrs. G.	25	No.	May 13th, 1887.	Partial retroversion.	Perfect.	
9	Miss McL.	24	No.	June 20th, 1887.	Normal.	Perfect.	Subsequent removal of tubes and ovaries did not relieve.
10	Mrs. P.	27	Yes.	September 25th, 1887.	Normal.	Not improved.	
11	Mrs. De S.	23	Yes.	October 20th, 1887.	Normal four months.	Improved.	Adhesions. Occasional pain in round ligament region. An old bladder irritability improving, and is nearly cured.
12	Miss Ch.	40	No.	January 21st, 1888.	Normal.	Not improved.	
13	Miss L.	19	No.	April 24th, 1888.	Normal.	Perfect.	Round ligaments very small and weak. Left broke during operation. Subsequent removal of tubes and ovaries with perfect relief.
14	Miss B.	22	No.	April 26th, 1888.	Normal.	Perfect.	
15	Mrs. B.	25	No.	May 25th, 1888.	Retroflexion.	Nearly perfect.	Pendulous ovaries. Round ligaments small and weak. Right broke during operation.
16	Mrs. M.	28	Yes.	June 5th, 1888.	Normal.	Improved.	
17	Mrs. L.	32	Yes.	June 27th, 1888.	Retroflexed in 3 months.	Not improved.	Perfect.
18	Miss E.	25	No.	July 17th, 1888.	Normal.	Perfect.	
19	Mrs. H.	30	Yes.	November 12th, 1888.	Retroflexed.	Not improved.	

own cases in which this operation was a failure, I operated subsequently for removal of the tubes and ovaries, and the relief was perfect. While the operation should never be done when there are manifest adhesions, or when there are inflammatory conditions of the ovaries and tubes, there are also certain conditions, which we cannot determine beforehand, that are just as liable to render the operation unsuccessful. One of these is the extension of the falx of the broad ligament backward to the meso-colon on one or both sides (I have seen this in the cadaver in two cases), the effect of which is that, if the uterus is pulled up to place, the tension of the broad ligament is sufficient to pull it back again.¹ Another point is unrecognizable adhesion of the fundus of the uterus to the small intestines; we can replace the uterus completely, but on account of these adhesions the movements of the intestines will constantly tend to counteract the effect of the shortened round ligaments. Another point is that the round ligament, between the fundus of the uterus and the point where the peritoneum is reduplicated upon the round ligament, is sometimes so long that, when we get the peritoneum pulled through the internal ring as far as possible, there is still such a distance between the two points, and the slack of the ligament is so great, that it does not pull up the uterus and does not hold it. Another point now well recognized: the round ligaments are sometimes so small and weak that they will not afford any strength and are very easily broken. I operated in two cases in which I broke the ligament on one side, although I was extremely careful, both of them being extremely weak and small. In one case the ligament was hardly larger than a knitting needle and very soft. It was examined afterwards and was found to be the seat of fatty degeneration; it would hold nothing. In considering the indications for Alexander's operation, I should limit it to an exceedingly small class of cases—*i.e.*, to a class of women in whom there had not been the slightest history of peritonitis. If they had ever had peritonitis, no matter how slight, I would not operate. I would avoid every case where there was any inflammation of the tubes or ovaries, and would eliminate as far as possible the other conditions I have mentioned. Then the question would arise in regard to women who had borne children. If I did the operation, it would be with the understanding that here success would be extremely doubtful. My statistics show that nearly fifty per cent of women who have borne children, where everything pointed to a favorable conclusion, did not do well, and the uterus finally

¹ Dr. Hendricks, Prof. Anat. Med. Dept. University of Minnesota, tells me that he has made the same observation.

retroverted. While theoretically the operation is first-class, yet in considering the results practically I think the operation should be cautiously limited.

DR. F. H. MARTIN.—Mr. President, I would like to speak to some extent in answer to the last speaker. You can always make up your mind, when a speaker gets up and attacks with considerable vehemence the propositions of another, that he will always end his remarks by presenting a fad of his own; therefore, as soon as I heard the remarks just uttered derogatory to the successful operations of Dr. Newman, and the alarm assumed by the speaker that such results would cause everybody to run to the operation, I had no idea but the remarks would end with tamponade, as they did. I believe this Society ought to take a broader ground. I believe that Dr. Newman's operations were well selected, and if cases are not well selected in this operation, as in any other, failure is inevitable. I believe that Dr. Abbott's cases were not well selected, as he himself admits, and the result is they are not all successful. I have done the operation the same number of times as Dr. Abbott—nineteen—and I believe my cases were not all well selected, because I have had some disastrous results. These, however, will not deter me in the least from performing the operation in the future; they have simply been grave lessons to me. The cases that were well selected I am proud of, and amply demonstrate the justifiableness of the operation in selected cases. In looking at the cases I could get at to day, I find the following results in ten cases that I remember and have seen within a year: seven are completely cured, and by that I mean that they are absolutely relieved of all their symptoms. We have heard from the previous speaker the astonishing assertion that there is no reason in the world why there should be any pain or distress or sensation from a misplaced uterus, providing the uterus is healthy. The fundus may press upon the rectum, causing constipation and backache; or upon the bladder, and cause the woman to rise six times a night to pass urine with great distress and pain; there may be hemorrhoids, and dragging upon the broad ligaments and ovaries, and all that and much more. Notwithstanding these are symptoms not recognized in the practice of the previous speaker, they certainly do occur in your practice and in mine. These symptoms are very severe and should be relieved, and can be relieved successfully by this operation. I believe this operation is only justifiable when the uterus can be retained in proper position by means of a properly fitting pessary, without symptoms. In other words, if the uterus can be replaced and held in position by a Smith's modification of a Hodge, or by a Hodge, or any other well-fitting pessary, and all symptoms are absent, I

believe Alexander's operation, if it can properly be performed, is indicated. I believe also that in those cases alone should the operation be performed. The first case I operated upon which was a failure was a dispensary case, and I remember it because of the trouble it has given me. The woman is not yet well. The uterus is in position; however, there were evidently adhesions and there is considerable pain and distress remaining, and I wish I had not performed the operation. The second case was taken to the Presbyterian Hospital a year after the operation, and the suffering of that patient was simply horrible. She thought she had cancer of the rectum. She was put under ether and an examination made, and what seemed to be an adherent prolapsed ovary in the cul-de-sac of Douglas was the diagnosis. The case was referred the next day to Dr. Parkes, who made an examination and advised an exploratory incision. In three or four days an exploratory incision was made, and the prolapsed ovary in the cul-de-sac of Douglas was found, with the addition of a small fibroid projecting from the fundus of the uterus. The ovary was adherent undoubtedly at the line of the operation for retroversion, hence aggravated symptoms followed. The ovary was removed and the wound closed; the woman died in five weeks. The third case was a woman who had, I discovered afterwards, pyo-salpinx and enlargement of the ovaries. I know that was the case, because the symptoms were so aggravated by the operation that I performed abdominal section and removed the ovaries and tubes with their adhesions, and found the cause of my failure. This woman recovered.

DR. T. J. WATKINS.—I am glad to hear of the good results of this operation reported by Doctors Newman and Martin. Although it has now fallen somewhat into disuse, it had at one time numerous adherents.

I have done Alexander's operation only a limited number of times, but have had the opportunity to observe its results in a large number of cases. None of these cases were cured therapeutically, but in many of them an alleged anatomical cure resulted. The suffering in these so-called anatomical cures is caused, in my opinion, either by adhesions, by mallocation of the uterus, or by continuous strain upon the shortened ligaments—that is, muscular strain.

It has been claimed that the pain in these cases is due to adhesions, but it is difficult to see how this could occur unless the operation was followed by extensive pelvic inflammation.

That the pain is due to mallocation of the uterus seems probable, since the mechanical effect of the operation is to draw the uterus upward and forward, and thereby to partially obstruct the pelvic circulation and to change the direction of

the intra-abdominal pressure upon the uterus and its appendages.

When the patient is erect, a perpendicular line from the promontory of the sacrum passes through the pubes. This line is parallel, or nearly so, to the superior strait of the pelvis and to the vaginal canal. The location of the pelvic organs is almost or entirely posterior to this line. Under these conditions the intra-abdominal pressure upon the pelvic organs is exerted only laterally. Alexander's operation draws the uterus anterior to this line. The direction of the intra abdominal pressure is then vertical.

The pain in retroflexion of the uterus is usually rather the result of the uterine prolapse than of its malposition, for the pain is usually relieved, without reposition of the uterus, by sustaining it in its normal plane in the pelvis. Retroflexion seldom if ever causes pain until prolapse occurs.

Prolapse of the ovaries should not, I think, be considered an indication for Alexander's operation, for, if their descent is due to malposition of the uterus, they require no attention except that provided by repositing and sustaining the uterus in its normal position. If the prolapse of the ovaries, however, is not a result of malposition of the uterus, Alexander's operation will not relieve it, for then the descent of the ovaries is due to rupture or stretching of the tissues which normally retain them in position.

DR. A. W. ABBOTT.—I have nothing further to say, except to call attention to two points. One is that, after some of these operations—I think three—there was a pain which the patients ascribed, not to the position of the womb, but to the position of the ligaments, describing it as a sharp pain when they exercised a good deal; and I have seen one or two others that had been operated on with the same results. I do not know but this is the fault of the operator, and perhaps it would not be so with Dr. Newman's method. The other is a contra-indication to the operation which I did not mention, but which I have found on several occasions—that is, a pendulous ovary, with the mesovarium so long that, even after the uterus is put in place, the ovary will hang down in the Douglas' cul-de-sac. These cases are not fit for the operation.

The twentieth case I have not placed in the table, as the patient died, a week after the operation, of peritonitis, due largely, I think, to an accident. Her husband was an epileptic, and upon the second day, while stepping over her, had a seizure and fell with his whole weight (175 pounds) upon her abdomen.

DR. H. P. NEWMAN, in closing the discussion, said: I have little to say, as some of the criticisms made to-night have

been based on theoretical grounds, and by those evidently unfamiliar with the operation; for these objections have been previously made and long since refuted by the clinical experience of eminent operators.

As regards success in these cases, they *were* well selected, with one or two exceptions. The first was a very troublesome case, one that I supposed would be a failure. There were some adhesions from previous pelvic inflammations, and, following the operation, the pain was increased, probably from the position in which the uterus was held by the ligaments being shortened. However, pregnancy followed, and the patient is now cured. In the other instance the patient lives in Nebraska, and I have not as yet been able to get an intelligent description of her case, particularly as to the position of the pelvic organs. When I heard from her last spring her condition was one of freedom from her former troubles; she was doing her own housework, and had not suffered a return of any of the old symptoms, therefore had not consulted a physician or had an examination.

I have had two failures in my more recent cases, but they were failures due to my mistaking the indications.

In each case I did the operation for prolapsed, enlarged, and tender ovaries, together with bad retroversions—ovaries that had been in this condition a long time, and where I thought that restoring the uterus with the ovaries might prevent the necessity of removal. In both instances the subsequent pain and increase of symptoms induced me to remove the ovaries, which proved in each case to be cystic.

There will always be failures in this operation where it is done for indications that Alexander's operation is not claimed to cure. Where done as a conservative operation for restoring ovaries, their condition not being definitely known, there is always an element of uncertainty and always a possibility of failure; but the failure should not be referred to the operation, but to the judgment of the physician.

In regard to the method I have brought forward, the points that I have stated, I think, are well taken, and, if put in practical use, will perhaps be better realized than they can be by simply hearing them tabulated here. I think some of the cases Dr. Abbott referred to might possibly have been followed by better results, certainly in finding larger and better-developed ligaments, if the operation had been done after the high or direct method.

You know the distribution of the round ligament begins before it escapes from the abdominal ring, and consequently in dissecting the ligament from its attachments, as is necessary in the old operation, some of its fibres are destroyed and the ligament weakened.

It stands to reason that drawing upon this weakened ligament may cause stretching in the inguinal portion, rather than pulling on the abdominal portion, which is essential in restoring the uterus to a normal or anteverted position.

In upward of thirty cases, my own and those of others using the direct method, as many pairs of strong, well-developed ligaments have been found—this in significant contrast to the atrophied and attenuated affairs spoken of by those still using the old method of operating.

In regard to the point brought out by Dr. Watkins, as to putting the uterus in too high a position, it must be remembered that the round ligaments are not suspensory in the sense of holding the uterus up, they simply antevert the uterus and hold it forward across the brim of the pelvis; and from my own experience in operations, and from repeated experiments made upon the cadaver, I believe they are capable of doing this in all cases where there are no adhesions. In short, there ought to be no anatomical failures in properly selected cases.

I have yet to know of a single physician, who has operated any number of times, using an improved method, who has not met with good results, and with whom the operation has not grown in favor.

DR. BAYARD HOLMES then read a paper on

THE TREATMENT OF ACUTE ANEMIA BY INFUSION.¹

DR. PARKES.—I should ask what effect Dr. Holmes found was produced by the introduction of a quart of this solution in the back—I mean locally, the amount of distention? I know personally of two instances in which this method was adopted, apparently with perfect relief. One I saw practised by Prof. Schede in a young fellow about 16 years of age, upon whom he had previously done an operation on the lower end of the femur, and some two weeks after this operation the young fellow was taken, the wound unhealed, with a severe and profuse hemorrhage and nearly bled to death. He was brought to the hospital one afternoon, and Prof. Schede injected this solution of salt—one teaspoonful of salt to a quart of water—I should say a pint of it, into the boy's body, with apparent restoration of vitality; at least his pulse was perceptible afterwards and his general appearance much better, so that Prof. Schede went on and secured the vessels in the popliteal space.

In another operation, by Prof. Leopold, he transfused a solution of a teaspoonful of salt to a quart of water two days previous to doing an abdominal hysterectomy for a bleeding fibroid; the woman had bled so badly that she was

¹ See original paper, page 281.

practically exsanguinated. Apparently the hysterectomy was done without any more effect upon the patient than the operation would have caused under ordinary circumstances.

I have also seen two cases in which there has been direct transfusion of defibrinated blood, with a very small apparatus, in which the effect was that of restoration or restitution of the patient from the effects of profuse hemorrhage. In both these instances the direct transfusion of blood was made with the ordinary black hard-rubber ounce syringe. The opening was made directly into the vein and the blood injected into it; four syringefuls only were introduced in each case.

DR. F. H. MARTIN.—Mr. President, I would like to express my admiration of this little machine. I must confess that when I telephoned Dr. Holmes, asking him if he could perform transfusion, and he very positively said he could and that he had the apparatus, I was delighted. I was very much surprised, when he came, to find that the whole apparatus was contained in this little box. I expected Dr. Holmes would come with a sheep or a negro, or something of that kind, from which blood would have to be drawn and defibrinated, etc. He, however, accomplished the end with astonishing quietness, without any fuss or turmoil at all, and it certainly had a wonderful result in reviving the patient.

THE PRESIDENT.—The apparatus is substantially the one employed by Münchmeyer, plus the Allen pump. One theoretical objection to this method has been advanced by Prof. Schäfer. From his experiments on dogs he has demonstrated that in many cases death from hemorrhage is due not so much to loss of fluid as to loss of corpuscles. In these cases the injection of a physiological salt solution will probably accomplish no great good. I saw Dr. Holmes transfuse in the case of extra-uterine pregnancy. The hemorrhage was into the sac behind the peritoneum, and due to the detachment of the extra-uterine placenta. The woman was pulseless, pallid, and you could scarcely hear the heart beat by applying the ear over the precordium. Her skin was leaky and she was in the most profound condition of collapse, shock, and hemorrhage I have ever seen an individual in and still survive. The transfusion was made in the subcutaneous tissue about the lower angles of the scapula and over the small of the back. I rubbed the salt solution in as Dr. Holmes injected, and the fluid was very easily dispersed throughout the connective tissues, and without apparent local reaction. We did get a little emphysema over the loins, but that was due to the insertion of the needle, for which I was accountable. The effect in that case seemed to me to be magical; within six hours after the injection the pulse came up, and the next morning the woman got out of bed and walked around the room. In addition to

this, however, Dr. Mattison injected a quantity of peptonized milk into the rectum. Either as the result of the salt solution, or the enemata, or the wonderful tenacity of life that some Germans in particular seem to manifest, or of all three factors, that woman recovered.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Regular Meeting, October 9th, 1890.

The President, W. H. WENNING, M.D., in the Chair.

DR. E. S. McKEE read a paper on

OBESITY IN ITS RELATION TO MENSTRUATION AND CONCEPTION.¹

DR. JULIA CARPENTER said she had had some experience in reducing weight, but was hardly able to express an opinion as to whether obesity was the cause of sterility or not. She had been quite successful in reducing the weight of obese persons.

She cited the case of a lady, 29 years old, with an excessive amount of flesh. Ordered milk diet, one ounce every two hours; added a little soda to prevent constipation. Patient continued to do some house work, and in a short time breathing was much easier, so much so that she could run up and down stairs without difficulty. The milk diet was gradually left off and the patient allowed the ordinary diet, but after a few months she began again to take on flesh and is now as large as at first.

DR. G. S. MITCHELL said it was hard to determine where obesity began and where healthy nutrition ceased. Physiologists are agreed that obesity, properly speaking, is a perversion of healthy nutrition, and that there are many causative factors. Heredity is one of the important factors; the circulation is sluggish, the number of red corpuscles comparatively few.

It is known that there is an intimate relationship between sexual relation and obesity in animals and eunuchs. Whether it is directly the cause of sterility, he cannot from his own experience express an opinion. He could recall several very large women who were very prolific, also many with scant men-

¹ See original article, page 295.

struation who were prolific; yet, generally speaking, scanty menstruation and obesity go together.

He remembers to have seen in the altitudes of Tyrol corpulent persons lose sixty to seventy pounds during a six to eight weeks' course drinking chalybeate waters. It is a recognized fact that obesity is not found in mountainous regions.

Anything that improves the nutrition lessens the amount of flesh. The very treatment that makes lean people fat makes corpulent subjects lean.

DR. REAMY said, with reference to the remarkable reduction of obesity obtained in Dr. Carpenter's case, there could be no marvel, for the small amount of food allowed this patient by Dr. Carpenter was about equivalent to starvation. He could not, therefore, commend the treatment. The same reasons would explain the rapid recurrence of obesity when this patient was allowed liberal diet.

The important question to be considered in such cases as those presented by Dr. McKee is: Does the patient actually suffer of obesity associated with anemia? This is a diseased state, associated with which sterility is quite common. He had noticed some curious clinical facts. Women who have been married from three to five years, who seemed before marriage to be in good health, except slight dysmenorrhea, but who were of rather spare habit before marriage, seek the advice of a physician, as above stated, three to five years after marriage.

They are now obese, increasingly so; they are sterile; menstruation is very scanty, not necessarily painful. An examination will disclose that the cervix is atrophied, presenting to the examining finger the conditions of the infantile cervix. And this notwithstanding the fact that at the time of marriage the cervix was normal in size, thus separating such cases from the usual cases of infantile cervix. This condition, as is well known, is a failure of development, and therefore is from childhood. In these women the sexual propensity and power are not diminished. The neurotic state usually presenting in such subjects—apparently largely due to the intense but ungratified desire for children, associated with the fact that ordinarily the physician can promise no relief—makes them truly objects of pity.

The speaker had in a few instances, but very few, been successful in the treatment of such cases by dilatation of the cervix and the alternate use of the galvanic and faradic currents. But failure in the treatment of such cases is far more frequent than cure.

In other cases, a few years after marriage the sexual desire and capacity are abrogated from causes which cannot be detected, no physical change in the ovaries or condition of cer-

vix being detected, but obesity rapidly supervening upon abrogation of the sexual desire. There are questions connected with this whole subject which need to be worked out.

DR. E. S. McKEE, in closing, said that in answer to Dr. Reamy's question, whether obesity caused sterility or sterility obesity, he believed, with our knowledge of to-day, no one could answer. There was hardly any doubt but that certain cases of anemia induced obesity. He remembers a case that had been sterile for nineteen years, and, after a course of treatment with Bland's pills, became pregnant. The speaker thinks that the two are closely united, and if we can cure the obesity there is hope of likewise curing the sterility.

DR. RUFUS B. HALL reported

A CASE OF SUPRAVAGINAL HYSTERECTOMY,

when he removed the uterus at the vaginal junction, and exhibited the specimen, which was removed twenty-four days ago. The specimen weighed six pounds, and had both ovaries and tubes attached.

Mrs. G., age 34, widow seven years, mother of one child 9 years old. Was sent by Dr. Culver, of Kingston, O. She had sought relief in vain for several years. The tumor was first noticed five years ago, since when she has had hemorrhage at the menstrual period, lasting ten to fifteen days, until nine months ago. Since that time the hemorrhage has been so severe that she could leave her bed but little, and lately she bled so freely that she could not leave her bed at all. The tumor filled the pelvis and pressed so much on the rectum and bladder that she suffered greatly on that account. Both broad ligaments were involved. At one time she was a strong, powerful woman. Of late she has lost flesh and has become much depressed, finding that she could no longer make her living, and having no friends to fall back upon. After the opening was made and the tumor pushed out, when the pelvic portion could be examined, it seemed as if it would be impossible to secure this tumor by any extraperitoneal method, the base being as thick as any portion of the tumor and extending across the pelvis. But by the aid of Tait's rope clamp it was possible to make a pedicle after the plan of Bantock. With great tension the stump was brought into the wound and secured. This made the drag excessive. She required large doses of morphia for the first two weeks. Recovery was uninterrupted. When the clamp was removed a cavity $1\frac{1}{2}$ inches by 2 inches and $1\frac{1}{2}$ inches in depth remained, which is filling up rapidly. The patient is now convalescent.

DR. HALL also presented

OVARIES AND TUBE

removed yesterday. The left ovary had contained a cyst as large as an English walnut. While removing the ovary the outer coat gave way, and the cyst was removed without rupturing it, and presented to the Society. The ovary was partly destroyed, and in the broad ligament on the same side there are two parovarian cysts as large as a hickory nut, and another small one. The tube and ovary from the right side did not appear to be extensively diseased, yet the ovary was adherent to intestine. They were removed on account of the presence of a uterine fibroid, as large as a black walnut, in the anterior wall of the uterus.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, December 3d, 1890.

A. L. GALABIN, F.R.C.P., *President, in the Chair.*

Specimens.—DR. AUST-LAWRENCE: (1) Large Polypoid Myoma; (2) Calculi from the Female Bladder; (3) Cast of a Stone, with a Hairpin as its Nucleus, from the Female Bladder. DR. PERCY BOULTON: Calculi from the Female Bladder. DR. DAKIN: An Eight-months' Fetus with Atresia of the Anus. MR. MEREDITH: Ovarian Cyst with Papillomatous Growth complicating Pregnancy. MR. GOW: Lympho-Sarcoma of the Uterus. DR. PHILLIPS: Ruptured Uterus due to Violence during Labor.

DR. AUST-LAWRENCE read a paper

ON THE OPERATION FOR RESTORING THE PERINEAL BODY IN COMPLETE RUPTURE OF THE FEMALE PERINEUM.

Out of 30 cases, 28 succeeded at the first operation, the other 2 after a second operation. All the cases suffered from incontinence of feces and inability to restrain flatus, the rupture in all being completely through the lower portion of the rectum. He believed that the loss of the supporting and restraining power of the levator ani was an important factor, the rectum retracting out of the way of the grasp of the perineal muscles. The rectum should be freed from its attachments in its abnormal situation, and brought down and fixed

in its proper place. The operation he recommended was that known as splitting the septum, for the first idea of which he was indebted to Mr. Lawson Tait. He then related details of a case. He operated, as a rule, three days after a menstrual period. The bowels were made to act well each day for one week prior to the operation, but no action was solicited on the day of the operation. For one day before and ten after, only liquid nourishment was given. No opium was given. The catheter was used every eight hours. One week after the operation the bowels were relieved by repeated small doses of *conf. sennæ et sulphur*, and daily evacuation was subsequently obtained. The sutures were removed on the tenth to the fourteenth day. They were made of carbolized silk. Minute details of the operation were then given.

DR. PERCY BOULTON read a paper on

THE PURSE-STRING SUTURE: ITS USE IN COMPLETE RUPTURE OF
THE PERINEUM.

The paper describes an operation which the author has employed successfully in seventy-three cases of complete rupture of the perineum. The method of using the purse-string suture is explained, and it is claimed that by means of it the sphincter ani is more perfectly restored than by other methods of operating.

DR. JOHN PHILLIPS said his own experience was entirely in favor of the purse-string operation. He had operated nineteen times with seventeen successes. He generally left a gum-elastic catheter in the rectum after operation, to give exit to flatus. He obtained bowel action on the fourth day. He considered catgut the best ligature.

DR. HORROCKS said that his colleague, Dr. Galabin, and himself, at Guy's Hospital, used catgut for those ligatures which were tied in the rectum, and silkworm gut for the rest, because it had been found that in removing the ligatures there was a danger of breaking down the new tissue, and so impairing to some degree the successful result of an operation. The catgut required no removal, and could be left to absorb. The surface ligatures were easily accessible.

DR. WILLIAM DUNCAN considered transverse sutures in the torn septum vital to the success of the operation. He had seen several cases where, after the flap-splitting operation, the reunited perineum had stretched, rendering a second operation necessary. He now preferred to have the bowels open daily instead of having them locked up for several days.

DR. HANDFIELD-JONES was unable to accept the view that the rectum was drawn upward, and needed to be freed and drawn down at the operation. The edges of the torn rectum

were rolled outward and forward by the retraction of the elastic tissues towards the ischio-rectal fossæ. Similarly the mucous membrane of the ruptured posterior vaginal wall was drawn outward and backward.

DR. HEYWOOD SMITH referred to Dr. Duke's modification of the flap-splitting operation. He thought it was best to get the bowels opened the day after the operation, and on every subsequent day, by small doses of castor oil, as then there was less chance of the newly adhering parts being torn through.

DR. GERVIS said he had used the purse-string suture for many years. He used fine catgut in repairing the laceration, and cut them off short on the rectal side. He had seen many excellent results from the quill sutures.

DR. PLAYFAIR thought the subject had been well worked out, and that there was but little new to say. He had obtained success with many different plans of operation. He thought Mr. Tait's flap-splitting operation was to be selected when the recto-vaginal septum was not torn, and some other procedure when it was torn. He always used buried catgut sutures for the split, and of late years had discarded silver wire for chromic gut. As to the purse-string, it was obviously much the same thing as the lower suture described by Thomas. It should be inserted low down on either side.

DR. AUST-LAWRENCE, in reply, said that his illustrations had been used for simplicity, and not with any idea of their scientific correctness.

DR. PERCY BOULTON, in reply, said that nothing raised the ends of the sphincter to the middle of the perineum so well as the purse-string suture used in the way he recommended. In some cases where the stitches cut through early, he let go the purse-string suture after three or four days. This suture (1) raised the ends of the retracted sphincter, (2) drew down the recto-vaginal wall, and (3) made the rectal tear doubly secure; only in the last point was it truly a suture. He preferred silver wire for all the sutures, and used it in two thicknesses: No. 5 for the purse-string, and slightly thicker for the perineum stitches. He thought they cut less than gut and kept the parts more at rest.

DR. LEITH NAPIER read a paper on

HABITUAL ABORTION.

Some authorities assert that "habitual" abortion is often due to indefinite sources of uterine irritation impossible to recognize. Others esteem syphilis as the most common cause of habitual abortion. Both views are disputed. Apart from disease, malformation, or physiological incompetency, there is

no "habit" of aborting. The pathology of "habitual" abortion is the same as that of ordinary or single abortion.

More than half the cases are due to uterine congestion or disease, and only 9 per cent to syphilis. Reflex causes are discussed; at most only 7 per cent are truly reflex.

Syphilis is much more commonly the factor of premature birth than of abortion. Seventy-seven per cent of women subject to "habitual" abortion are either nulliparous gravidæ who begin their obstetric career by frequent abortions, or multiparous women who often terminate fecundity by repeated abortions.

Women who habitually abort are, as a class, very fertile.

"Habitual" abortion is highly amenable to treatment. Over 67 per cent of the patients were delivered at term after cure of the cause of the "habit."

DR. PHILLIPS asked if the author had included under the term *reflex* those cases in which no apparent cause could be discovered. He had lately treated two such cases by free administration of viburnum prunifolium, with the result that both had gone to full term.

DR. A. ROUTH alluded to paternal albuminuria as a cause of recurrent abortion.

DR. HANDFIELD-JONES thought the importance of cardiac incompetency as a cause of repeated abortion had been overlooked in the paper. A failing left ventricle led to sluggish circulation in the uterus, and, as a result of this, to extravasation of blood between the membrane and the muscular wall of the uterus. Hence the good results by administering cardiac stimulants. The term "habit of abortion" was unscientific; there was always a pathological cause.

DR. LEITH NAPIER, in reply, said he had wholly avoided treatment in his paper, but he regarded viburnum with favor. He thought congestion of the uterus more important as a factor in abortion than retroflexion. He admitted the importance of chronic cardiac disease.

REVIEWS.

ANATOMY OF ADVANCED PREGNANCY AND LABOR. By A. H. F. BARBOUR, M.D., F.R.C.P. Ed., and J. C. WEBSTER, M.B., M.C. With 16 lithographic plates. Pp. 64. Edinburgh: Royal College of Physicians, 1890.

This is a study of the topographical anatomy of the pelvis

and its contents, and of the changes and anatomical relations that are brought about during the progress of labor, made by means of carefully prepared frozen sections and casts.

Four bodies were examined : one dead at the beginning of the eighth month of pregnancy ; one with labor just beginning ; one (unique) toward the end of the second stage ; and one just after the completion of the third stage.

A point of clinical significance in regard to rupture of the genital tract is shown in the sections from the third body, which demonstrate that the peritoneum in front of the uterus is drawn upward out of the pelvis, so that the portion of the genital tract within the pelvis has peritoneum in relation to it only *posteriorly*.

Other sections of this same body confirm the view advanced by Barbour in former papers that the placenta does not become separated during the second stage of labor as the result of diminution of its site.

From a cast of the child at the end of the second stage, we see that the flexion of the head normally present during pregnancy has been diminished rather than increased during labor; and from the study of other frozen sections of the same stage, Barbour holds that it is doubtful whether we should describe flexion as one of the movements of normal labor. The body of the fetus as a whole shows an elongation of the oval of pregnancy into a cylindrical form. This elongation has been noted clinically, but no direct anatomical proof has been advanced until Barbour obtained this unique cast.

The sections of the fourth body afford valuable information of the normal conditions after the expulsion of the placenta. The pelvis is shown to be completely filled by the uterus, so that the latter compresses all the extra-uterine structures against the bony wall and the pelvic floor, and thus greatly interferes with the flow of blood in them ; for this reason the general bloodlessness of the pelvic contents was very noticeable. It would seem that for some time after delivery the pelvis is plugged by the great mass of the uterus, and that bleeding from its inner surface is prevented and retrogressive changes in its substance rapidly started through the checking of the blood supply, not only as a result of retraction and contraction of the muscular walls of the organ itself, but also through the mechanical pressure of the uterus as a whole upon the broad ligaments and the tissues lining the pelvic wall which contain the greatly enlarged vessels leading to it. In speaking of hemorrhage from a lacerated cervix, Barbour says : "The uterine body compresses the lower uterine segment and cervix against the pelvic floor ; the cervix, however, from its position is little affected by this pressure from above, and, together with the vascular vagina, vulva, and perineum,

becomes congested and ecchymosed, in sharp contrast to the bloodless tissues in the upper portion of the pelvis." If the cervix has been torn during labor, and especially if the laceration have extended into the parametrium—rich in venous sinuses—we can understand how it is that there may often be a considerable amount of hemorrhage. Should this not be readily checked by the ordinary means (hot douche), pressure of the uterus against the pelvic floor must tend to check the bleeding by diminishing the flow of blood to the lower uterine segment and cervix.

The greater frequency of hemorrhage after the end of the third stages in cases with either abnormally large or small pelves, is accounted for by the fact that in a *contracted* pelvis the body of the uterus stands above the brim, the lower uterine segment being elongated and lax. There being no pressure exerted either toward the bony wall or pelvic floor, the whole pelvis is engorged with blood. In a *kyphotic* pelvis the uterus sinks down, but, owing to the great size of the pelvic cavity, it can be of no use as a plug in hindering the flow of blood to itself and to the other contents of the pelvis, so that in both these cases the conditions favor excessive bleeding

B. H. W.

STERILITY IN WOMEN; Including its Causation and Treatment.

By ARTHUR W. EDIS, M.D. Lond., F.R.C.P., Senior Physician to the Chelsea Hospital for Women, Late Obstetric Physician to the Middlesex Hospital, Late President of the British Gynecological Society, etc. Pp. 112; 33 illustrations. Philadelphia: P. Blakiston, Son & Co., 1890.

As its author states in his preface, this work is practically a reproduction, with certain additions, of a portion of his "Manual of Diseases of Women" published in 1881. While at that time it fairly represented the prevailing teachings upon this subject, it is now fully ten years behind the times. Much of its teaching is entirely obsolete, and all that it contains of value can be found in any good modern text book on gynecology. Great stress is laid on the influence of uterine displacements *per se* in inducing sterility, and on their treatment by pessaries, while scarcely anything is said of the complicating conditions, the endometritis or tubal troubles, which are now considered the important factors. For "stenosis of the os internum" the author recommends dilatation by steel dilators or by the practically obsolete sponge tents, using the latter with no efficient antiseptic precautions, and naturally finding that after their use "nausea or vomiting, heats and chills, at times occur," and that "the pulse may increase considerably in frequency and the temperature run up." In flexions the intra-uterine stem is favored, no less than

eight being figured in the text, and is advocated with a disregard of important details and cautions which, with several other procedures advised, make us consider the book an unsafe one to put into the hands of any general practitioner who may not appreciate the truth of modern pathology, the value of modern aseptic methods, or the risk of permanent injury to his patient which their disregard entails.

B. H. W.

THE JOHNS HOPKINS HOSPITAL REPORTS. Vol. II., Fasc. 3 and 4. *Report in Gynecology*. By HOWARD A. KELLY, M.D. Pp. 120, with photogravure plates. Baltimore: The Johns Hopkins Press, 1896.

These reports appear during the year as several fasciculi, which together make a very readable and interesting volume of some five hundred pages. They contain medical, surgical, and gynecological papers, details of cases, the technique of operations, pathological researches, etc. The present fasciculus, by Dr. Kelly, describes the operating room, and the aseptic and antiseptic rules in force in his department, gives a résumé of the laparatomies and other gynecological operations performed since his incumbency, and includes papers on the Management of the Drainage Tube in Abdominal Surgery; the Gonococcus in Pyo-Salpinx; Tuberculosis of the Tubes and Peritoneum; Ligature of the Trunks of the Uterine and Ovarian Arteries as a means of Checking Hemorrhage; Carcinoma of the Cervix Uteri in the Negress; Elephantiasis and Myxo-Sarcoma of the Clitoris; Kolpoureterotomy, etc.

QUIZ-COMPENDS. GYNECOLOGY. By HENRY MORRIS, M.D., Late Demonstrator of Obstetrics and Gynecology in Jefferson Medical College, Philadelphia, etc. Pp. 175; 45 illustrations. Philadelphia: P. Blakiston, Son & Co., 1891.—DISEASES OF CHILDREN. By MARCUS P. HATFIELD, A.M., M.D., Professor Diseases of Children, Chicago Medical College, etc. Pp. 182, with colored plate. Philadelphia: P. Blakiston, Son & Co., 1890.

The first of these little books is, of its kind, fairly well written, the portion devoted to gynecological examination being especially to be commended. It is, however, elementary in scope and excessively condensed, the whole subject of tubal disease being disposed of in less than a page and a half.

The second, on diseases of children, is one of the best compends that we have seen, and because of its clear style, its general completeness, and the skill shown by its author in the selection of material, deserves that success in its particular branch which has been won in obstetrics by King's manual.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.
Volume XV.; pp. 406. Wm. J. Dornan, Philadelphia,
1890.

An abstract of the more valuable papers and discussions making up this volume appeared in this JOURNAL in October, 1890 (see pages 1099 to 1138), to which our readers are referred. The volume wears its familiar dress, and bears the same impress of authority which characterizes the former utterances of the society's distinguished members.

ON SEVERE VOMITING DURING PREGNANCY. By GRAILY HEWITT, M.D. Lond., F.C.R.P., F.R.S. Ed., Emeritus Professor of Obst. Medicine Univ. College, Consult. Obst. Physic. to Univ. Col. Hosp., Late Pres't Obst. Soc. of London, Hon. Fellow Amer. Gyn. Soc., Obst. Soc's Berlin and Boston, etc. Pp. 148. London and New York: Longmans, Green & Co., 1890.

Two years ago the author published in the Transactions of the American Gynecological Society a paper of some forty pages which he has used as a basis in the construction of this. The present volume contains a collection, in abstract, of authenticated cases published by various authorities during the last twenty-five years, arranged and tabulated so as to facilitate their study and analysis, and to enable rational and sound conclusions to be drawn regarding the nature and treatment of the affection. The author holds that there is always a cause for severe vomiting in pregnancy, which must be found and corrected. Among the more important causes he places *displacements* of the gravid uterus, *thickening* or *induration* of the cervix, abdominal tumors, endometritis, alcoholism, disease of the abdominal or pelvic viscera, etc. Where the cause can be found and removed, cure will probably follow, though rarely abortion becomes necessary.

HYSTÉROPEXIE ABDOMINALE ANTÉRIEURE ET OPÉRATIONS SUS-PUBIENNES DANS LES RÉTRODÉVIATIONS de l'UTÉRUS.—
ANTERIOR ABDOMINAL HYSTEROPEXIE AND OTHER SUPRA-PUBIC OPERATIONS IN UTERINE RETRODISPLACEMENT. By MARCEL BAUDOUIN. 22 Illustrations; pp. 416. Paris: Lécrosnier et Babe, 1890.

This very prolix and exhaustive work, while valuable for reference to one wishing a complete history of these operations and their literature to the present time, would have been more useful to the average reader had it been condensed one-half.

The general consideration of the various surgical measures employed for the relief of backward displacements of the uterus; a historical review of true (intraperitoneal) hysterop-

pexie, with its indications and contra-indications; the technique of the operations, both extra- and intraperitoneal; a comparison of the results obtained, etc.—make up the main portion of the work. The illustrations are well chosen and add much to the clearness of the text. The last one hundred and fifty pages include a tabular synopsis of all recorded cases and a complete bibliographical index. The author deserves credit for his painstaking and careful research.

ABSTRACTS.

1. DIMITRI, O. H.: TOTAL EXTIRPATION OF THE UTERUS BY THE VAGINA (*Rev. des Sc. Méd.*, January, 1891).—The author defends very energetically this operation in the case of cancer of the uterus. He supports his position by relating thirty operations which were successful—a very remarkable series, since the statistics published oscillate between 18 per cent (Olshausen) and 60 per cent (Leopold).

The subsequent history of the operations was interesting. Eight times the operation was performed early; in one the return took place in a year after the operation; the seven others, during from one to three years, have shown no signs of return. In nine cases the operation was performed when the disease was far advanced; the return of the earliest was in a month, the latest eleven months after the operation.

G. P.

2. JORISENNE, G.: A POINT NOT RECOGNIZED IN THE TREATMENT OF METRORRHAGIAS (*Arch. de Toxicologie et de Gynécologie*, January, 1891).—The author speaks of the great thirst which accompanies various hemorrhages, and thinks that in extreme cases, where the hemorrhage has exsanguinated the patient, all drinks should be withheld, and that such a course, used with the other means ordinarily employed, will moderate, if not suspend, the loss of blood. He claims that this is true in cases of epistaxis, hemoptysis, and other hemorrhages besides uterine. He cites a case as illustrative.

G. P.

3. ROUSSEL, MARIE: SYMPATHETIC TROUBLES OF THE HEART IN UTERINE DISEASES (*Thèse de Paris*, 1890; *Rev. des Sc. Méd.*, January 15th, 1891).—Cardiac diseases are frequent in uterine, ovarian, and peri-uterine affections. They can be

described as of four types: an asystolic type, an arhythmic type, a syncopal type, and a latent type.

In the first the patients present the same form as those of the gastro-hepatic asystolic. It occurs more frequently in women of advanced age.

In the arhythmical and syncopal forms cardiopathic troubles consist principally in intermittent palpitations, of dyspnea and distress, of *lipothymia* or syncope. They are ordinarily coincident with anemia and nervousness.

The latent type is the most frequent of all. It is characterized by the existence of a presystolic murmur, sometimes accompanied by a doubling of the second sound.

These cardiac disturbances are due, according to the author, to the increasing vascular tension in the lungs, to the nervous excitation, moral influences, and mechanical disturbance. In order to cause their disappearance there are different factors which must be considered.

GRACE PECKHAM.

NOTE.

DR. E. C. DUDLEY calls attention to an error in the description of the operation in his paper on "A Plastic Operation Designed to Straighten the Anteflexed Uterus," published in the February number of this JOURNAL. On page 146, reading from the seventh line of the third paragraph, the description of the operation should be as follows:

"These sutures are not introduced in such a manner as to stitch the intra-cervical to the vaginal margin of the cut surface, but the cut surface is folded upon itself in a direction at right angles to this, *i.e.*, on either side that point, at the margin of the os externum where the backward incision commenced, is stitched to the very angle of the incision, so that the cut surface is folded upon itself, not from within outward, but from before backward. Thereby the os externum is carried directly back to the angle of the incision."

It is not the "*cut surface*" which is stitched to the angle of the incision, but the "*point*" where the backward incision commenced.

THE AMERICAN JOURNAL OF OBSTETRICS

AND

DISEASES OF WOMEN AND CHILDREN.

VOL. XXIV. APRIL, 1891. No. 4.

ORIGINAL COMMUNICATIONS.

THE SLOANE MATERNITY HOSPITAL.

REPORT ON THE FIRST SERIES OF ONE THOUSAND SUCCESSIVE CONFINEMENTS FROM JANUARY 1ST, 1888, TO OCTOBER 1ST, 1890.

BY

JAMES W. McLANE, M.D.,

Professor of Obstetrics in the College of Physicians and Surgeons, New York; Physician to the Hospital.

(With five woodcuts.)

THE Sloane Maternity Hospital of the College of Physicians and Surgeons of New York is situated at the corner of Tenth avenue and 59th street. It was erected in 1886 and 1887 by William D. Sloane, Esq., whose wife, a daughter of the late William H. Vanderbilt, endowed the institution by making all its beds free in perpetuity. It was opened January 1st, 1888, for the reception of patients, and up to October 1st, 1890, 1,000 women have been confined in its wards. As it has been pronounced by many physicians, both in this country and in Europe, a model lying-in hospital, and as its reputation is as yet in its infancy, a short description of the

building and the management of the service may not be out of place.

Its dimensions are sixty-five feet by seventy-five. It is of three stories and an attic. It is built of brick, with mouldings of granite and terra-cotta, and its construction is fire-proof throughout. The flooring of the halls and wainscoting of the stairways are of white marble; the flooring of the wards and operating rooms is of white vitrified tiles. The surfaces of the walls are in hard finish and painted white.

In the basement are located the laundry, the kitchen, the servants' dining room; the coal chamber and fan for warming and ventilation; a bath room where newly admitted patients are thoroughly cleansed before going to the wards; and a room fitted with lockers for the safe-keeping of the clothing worn by patients on admission.

On the first floor are the rooms of the house physician, the assistant house physician, and the matron; a reception room, dining room for the staff, manager's room, and a large examination room.

On the second floor there are three wards, one containing nine beds, the other two four beds each; a delivery room, sleeping rooms for the nurses, and the drug room; also a dining room for women awaiting confinement.

On the third floor there are three wards similar to those on the second, a delivery room, the apartment of the principal of the Training School, two isolating rooms for patients requiring separation from the rest, and sleeping rooms for ward nurses. The total number of beds is thirty-nine. In the attic are the rooms of the house servants.

The warming and ventilation of the building are provided for by a fan which drives the air, warmed by steam-heated coils, through ducts to every part of the house. Under a moderate speed of the fan engine 580,000 cubic feet of air are supplied to the wards per hour.

The bath rooms, sinks, and water closets are all situated in the northeast corner of the building, removed as far as possible from the wards and special delivery rooms, in which there are no pipes, not even for the supply of water.

The lying-in wards are used in rotation. Each one, having been occupied by four patients, is thoroughly cleaned, the

furniture washed with a solution of carbolic acid, and left unoccupied, with open windows, for several days.

Patients awaiting confinement are kept in wards by themselves, and separate from the puerperal women. On entering the hospital each patient is obliged to take a full bath under the supervision of a nurse, plenty of soap being used and special attention given to the hair, which is thoroughly shampooed with delphinium or ether, or both; or, if very dirty, with bichloride solution. A vaginal douche of bichloride (1:5,000) is given and a rectal enema of soapsuds. The woman is then attired in clean clothes, the property of the hospital; her own garments being placed in a bag and subjected to a heat of 250° F. in a small room specially designed for this purpose, and afterward stored in a locker in the basement. This arrangement is found very useful in protecting the wards from vermin.

The patient is then permitted to enter the ward set apart for waiting women, and allowed the following diet: Breakfast, oatmeal or hominy, tea or coffee with milk and sugar, bread and butter. Dinner, meat, vegetables, bread and butter, dessert, soup three times a week. Supper, tea with milk and sugar, bread and butter, stewed or fresh fruit.

All confinements take place in the special delivery rooms, which are located conveniently near the wards. Each of these rooms contains a table of special design (see Fig. 1), upon which all deliveries take place. Its length is five and a half feet; breadth, twenty-seven inches; height, thirty inches. It is admirably adapted for operative procedures. The top is divided into two parts; the one on which the patient's head rests being fastened to the legs of the table, and united by hinges to the other part, which is movable. By means of a screw near the lower end, the foot of the table can be raised to any height desired, thus providing for the instant lowering of the patient's head in case of hemorrhage. When covered with a double blanket and sheet, it forms a very comfortable bed. The bedding is protected by water-proof paper, which has been found an excellent substitute for the ordinary india-rubber sheet, and is used on all the beds in the wards. It is a soft brown paper, very flexible, covered with a thin coating of tar, over which is spread a single layer of gauze, which

gives it the appearance and feel of cloth. It is made for the hospital by Messrs. Heald Brothers, 59 Knightrider street, London, and imported in rolls of one hundred yards each, fifty inches wide. Its cost is about six cents a yard, free of duty. Whenever soiled, it is removed from the beds and burned.

Injectons are given by means of fountain syringes. These are of agate ware, specially made for the hospital. Each can has a capacity of two quarts. Near the bottom of the vessel is a projecting nipple, over which is fitted a soft-rubber tube joined at the other end to a glass nozzle for insertion in the

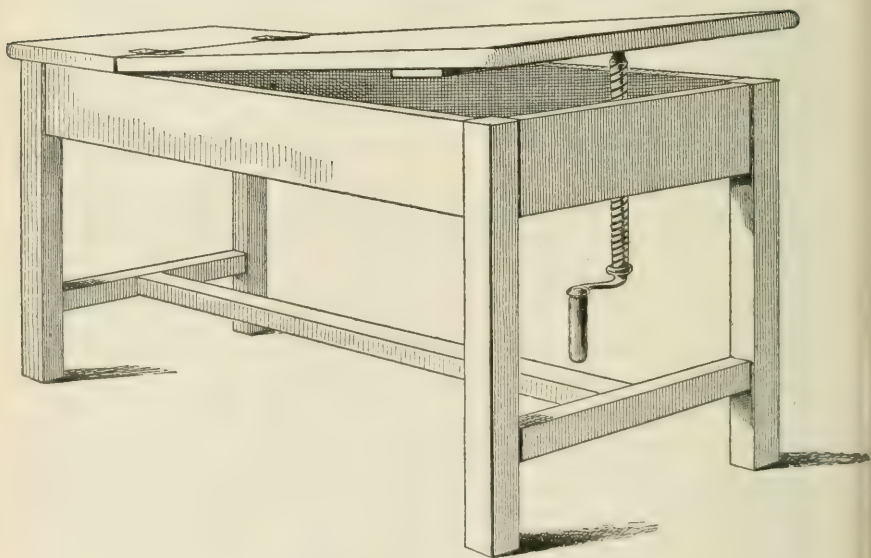


FIG. 1.—Delivery table.

vagina or uterus. When not in use, these glass tubes are kept in jars containing a solution of bichloride.

The house staff is composed of a resident physician, an assistant physician, a principal of the Training School for Nurses, and an assistant. By an arrangement with the New York Hospital, nurses are received regularly every two months from that institution, and given an obstetrical training before their graduation. This plan works admirably, and the patients have the benefit of intelligent and skilful nursing.

CONDUCT OF LABOR.

When a patient is taken in labor, she is transferred from

the waiting ward to the delivery room, where a vaginal douche and rectal enema are given early in the first stage.

Chloroform is given when necessary in the latter part of the second stage—to the obstetrical, not the surgical degree.

Delivery usually takes place with the patient lying on her left side, if a primipara; on her back, if a multipara.

The placenta is expressed by the Credé method at the end of fifteen minutes; one drachm of fluid extract of ergot then administered, a vaginal douche of three pints of bichloride solution (1:5,000) of a temperature of 116° F. given, and the uterus held for one hour after delivery, when, if well contracted, the binder is applied, the patient placed upon another table which is provided with wheels, and removed to the ward where she is to remain during the puerperium. The

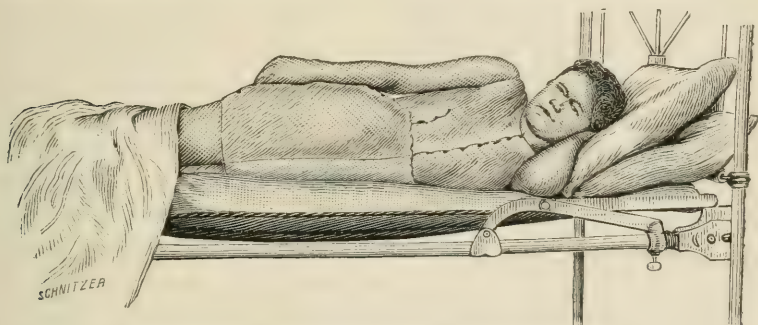


FIG. 2.—Patient with abdominal and breast binder applied.

perineum, if torn to any extent, is sutured at once with silk-worm gut.

The intra-uterine douche is only given in cases of instrumental delivery or where the hand has been introduced.

The entrance to the genital canal is closed by an antiseptic pad, twenty-eight inches long and eight inches wide, made of gauze and filled with absorbent cotton. On the first day these pads are changed every four hours; on subsequent days once in eight hours, the pads being somewhat smaller as the lochial discharge diminishes in quantity.

If after-pains occur, a draught is given containing one-sixth of a grain of the acetate of morphia, one minim of fluid extract of digitalis, and one drachm of spiritus Mindereri, and repeated if necessary.

The diet during the first day consists exclusively of milk;

on the second and third days oatmeal or hominy with bread and butter are given for breakfast, soup with some vegetable food and a dessert for dinner, bread and butter with stewed fruit for supper. Milk is given between meals. After the third day the patient is allowed full diet, similar to that given to those awaiting confinement.

The process of involution is promoted by the administration three times a day of

Extracti Ergotæ fluidi..... ℥ xv.

Extracti Digitalis fluidi..... ℥ ii.

Quiniæ Sulphatis..... gr. ii.

On the sixth day usually the patient is wrapped in blankets and allowed to sit up for two hours; for five or six hours on the seventh and eighth days. On the ninth day the binder is removed and patient allowed to walk. On the tenth day, if all has gone well, she is discharged—the average stay in the hospital being ten days in simple, uncomplicated cases.

No visitors are allowed in the wards. Patients and nurses wear only clothes that can be washed, and the physicians sack coats of white duck. All soiled articles of clothing and bedding are put in bags and at once sent to the laundry in the basement by means of a copper chute, the opening being in the hall, near the wards, and covered by a small iron door.

Physicians and nurses exercise the most scrupulous care in regard to personal cleanliness and disinfection. Before making a vaginal examination the hands are scrubbed and a nail brush used; they are then immersed in alcohol and afterward in a solution of bichloride (1:2,000). Alboline, kept underneath a bichloride solution, is used as an emollient. No sponges are allowed in the hospital, being replaced by absorbent cotton.

The Newly-born Child.—The cord is tied a few minutes after birth, and immediately afterward one drop of a two-per-cent solution of silver nitrate is put in each eye. The rectal temperature is then taken, the child weighed, wrapped in a blanket, placed in a crib, and surrounded by hot-water bags. Each child is weighed every morning and has a full bath (temperature 98° F.). The cord is dressed with iodoform and bismuth subnitrate, equal parts. The mouth is washed with saturated

solution of boracic acid. The child is put to the breast of the mother twelve hours after birth for the first time. After lactation is established, the child is allowed to nurse once in two hours from 6 A.M. to 10 P.M., and again at 2 A.M., ten nursings daily.

The following statistics are of interest :

TABLE I.

NATIONALITY.

Out of the 1,000 women confined, there were born in the

United States.....	377	Canada....	11
Ireland	320	Russia.....	19
Germany.....	104	Switzerland....	8
England ..	52	Hungary.....	5
Sweden.....	32	Wales.....	4
Scotland.....	17	Saxony.....	3
Austria	17	Norway.....	3
France.....	17	Poland ...	4
Denmark.....	4	Roumania ...	1
East Indies.....	1	Spain... :	1

TABLE II.

AGES.

The oldest patient was 46 years of age, the youngest 12 years and 10 months; 154 were under 20 years of age, 659 were between the ages of 20 and 30 years, 171 between 30 and 40, and 16 between 40 and 50.

TABLE III.

SHOWING THE PROPORTIONATE NUMBER OF CASES OCCURRING IN THE SEVERAL PREGNANCIES.

Pregnancy, 1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th	12th	17th	Total
No. of cases 547	232	91	52	25	11	14	9	10	5	1	2	1	1030

TABLE IV.

PRESENTATIONS UNDER WHICH CHILDREN WERE BORN.

Vertex.....	936, or 93.6 per cent.
Breech.....	49, " 4.9 "
Transverse..	10, " 1. "
Shoulder.....	5, " 0.5 "
Face.....	3, " 0.3 "
Brow.....	2, " 0.2 "
Foot.....	2, " 0.2 "
Doubtful.....	6, " 0.6 "

TABLE V.

SHOWING RELATIVE FREQUENCY OF THE FOUR POSITIONS IN VERTEX PRESENTATIONS.

Position.	No. of cases.
L. O. A.....	610
R. O. A.....	227
R. O. P.. ..	77
L. O. P.....	22

TABLE VI.

SHOWING THE NUMBER OF CASES REQUIRING OPERATIVE INTERFERENCE, AND OPERATIONS PERFORMED.

Induction of labor.....	12 cases.
Forceps.....	83 “
Version.....	14 “
Craniotomy.....	3 “
Total.....	112 “

TWIN CASES.

Of twin cases there were 13, about 1 in 77 of the whole number of women delivered, or 1.3 per cent.

No. of Cases.	Both Males.	Both Females.	One of each.
13	2	4	7

Presentations.

Vertex in both.....	6
“ and breech.....	4
“ “ transverse.....	2
Breech or “.....	1
	13

In 7 cases there were two amniotic cavities and a single placenta; in 6 cases there were two amniotic cavities and a double placenta. In no case was there a single amniotic cavity.

FACE PRESENTATIONS.

No. of cases.	Living.	Dead.
3	3	0

Two of the patients were delivered by natural efforts, one by forceps. In two cases the position was L. M. A.; in one L. M. P., rotation, however, taking place, so that it terminated as R. M. A. Two children were born alive; the one delivered by forceps was still-born.

VERSION.

This operation was performed fourteen times, or one in nearly seventy-one, or 1.4 per cent. The version was podalic in thirteen instances, cephalic in one instance. The operation was made necessary by malpresentation in nine cases, in four by placenta previa. Of the malpresentations, eight were shoulder cases, one a compound of head and foot. Of the mothers, three died, or one in five nearly. Two out of the three who died were in labor with placenta previa; the third entered the hospital moribund, with the child's arm prolapsed, and a ruptured uterus, and died twenty minutes after admission. Of the fourteen cases, six children were born alive, ten were still-born. Of the latter, four were premature, two macerated. In all the cases where the mother died the children were still-born. Of the fourteen cases, six were brought by ambulance, in labor. The versions were all performed by the combined external and internal methods, chloroform being used. Details of cases are briefly given below:

CASE I. *Transverse Presentation; Podalic Version.*—Æt. 29; IIIpara. Patient came into the hospital in labor, the os being dilated to size of a dollar. Membranes ruptured spontaneously, followed by prolapse of right arm. Chloroform was given, the arm returned into the uterus, and left foot brought down. A still-born male child was easily delivered, weighing three pounds, premature and macerated. Mother made a good recovery.

CASE II. *Twins; Shoulder Presentation; Podalic Version.*—Æt. 29; VIIpara. Patient brought by ambulance, after having given birth to a female child at her home. On examination a second child was found in an abdomino-anterior position, the right shoulder presenting, the amniotic sac having ruptured. Chloroform was given, hand introduced, shoulder pushed up, and left foot seized and brought down. The child, a male, was easily extracted. Both children were small and poorly nourished, labor being premature. Mother did well.

CASE III. *Contracted Pelvis; Placenta Previa.*—This case is described under Placenta Previa (vide Case I.).

CASE IV. *Placenta Previa*.—(Vide Case II., *Placenta Previa*.)

CASE V. *Left Shoulder Presentation*.—Æt. 30; third confinement. Patient brought in by ambulance, in labor, child's elbow being in the vagina, os fully dilated. Hand drawn down to determine position; found to be the left hand, with head on right side. A hot douche of bichloride solution was given (1:5,000), chloroform administered, hand returned into uterus, head pushed up by external manipulation, right leg seized and brought down, and head extracted by the Smellie-Veit method. The left arm became extended, and in sweeping it over the face the humerus was fractured. The child was living. Weight, seven pounds four ounces. Mother made a good recovery.

CASE VI. *Twins; Compound Presentation of Second Child*.—Æt. 30; third confinement. First child presented by the breech and was born without difficulty; weight, five pounds four ounces; living. Membranes of second child were ruptured, and head and foot presented. Bipolar version was performed, the head being pushed up and the foot brought down. A living male child, weighing nine pounds four ounces, was delivered, the after-coming head being extracted by the Smellie-Veit method. Mother made a good recovery.

CASE VII. *Right Shoulder Presentation*.—Æt. 28; sixth confinement. Membranes ruptured spontaneously. Child was in a dorso-anterior position, head being on left side of pelvis, right elbow at os uteri. Patient was put under chloroform, hand introduced into the vagina with three fingers passed through the cervix, and a bimanual version easily performed, the left leg being brought down. The breech was expelled by natural efforts. Arms became extended, but were drawn down without difficulty, and the after-coming head delivered by forceps. The child was living (a female); weight, six pounds six ounces. A hot intra-uterine and vaginal douche was given of bichloride (1:10,000). Mother recovered easily.

CASE VIII. *Rupture of Uterus*.—(Vide Case I. under that head.)

CASE IX. *Twins; Right Shoulder Presentation of Second*

Child.—Æt. 24; primipara. First child presented in the first cranial position, and was born after labor of eighteen hours' duration. It was living, and weighed five pounds two ounces. Uterine action then ceased. By palpation the presence of another child in utero was discovered, but no fetal movements could be detected and no heart sounds heard. The membranes were ruptured, and the right shoulder was found presenting at the dilated os uteri. A bimanual version was performed and the left foot brought down. Head was extracted by the Smellie-Veit method. The child was still-born (a female), weighing four pounds four ounces. Mother did well.

CASE X. *Shoulder Presentation; Cephalic Version.*—Æt. 27; fourth confinement. Patient entered hospital in labor. Child was in a transverse position, dorso-anterior, head to the left side, and right shoulder presenting. The membranes being unruptured, a cephalic version was performed under chloroform by combined external and internal manipulation, and the presentation converted into a vertex L. O. A., pads and a binder being employed to keep the child in this position, and the labor proceeded regularly, though slowly, until the birth of a living female child weighing four pounds fifteen ounces. The mother did well.

CASE XI. *Placenta Previa Centralis; Version.*—(Vide Case III., Placenta Previa.)

CASE XII. *Placenta Previa.*—(Vide Case IV. under that head.)

CASE XIII. *Shoulder Presentation; Dead Fetus.*—Æt. 30; fifth confinement. Patient came into the hospital in labor, the membranes having ruptured, and the child presenting by the shoulder, the elbow being at the os uteri. The uterine tumor was flaccid, and the child's form could not be made out by palpation. No fetal movements or heart sounds could be detected. Patient had not "felt life" for three weeks. An attempt at version by the Hicks method was made, but, owing to the contraction of the cervix and to the death of the child, leading to the loss of resiliency, it was unsuccessful. Hot vaginal douches were given to relax the cervix, and the patient allowed to rest for three hours. A second attempt was then made, and a macerated child, weighing

two pounds twelve ounces, extracted. A hot intra-uterine and vaginal douche of bichloride solution (1:10,000) was then given. The mother did well.

CASE XIV. *Shoulder Presentation; Dorso-Posterior.*—Æt. 39; fourth confinement. Patient brought in by ambulance, in labor, having been attended at home by a midwife. Pains strong and recurring every five minutes. Membranes had ruptured. As the os was imperfectly dilated, fifteen grains of chloral hydrate were given. In three hours os was well dilated. Position of child was dorso-posterior, with right shoulder presenting. No fetal heart sounds heard. Patient was now put under chloroform to the surgical degree, the left hand introduced into the uterus, the left foot seized and drawn down, and body delivered without difficulty, the head being extracted by the Smellie-Veit method. The child, a male, weighing eight pounds one ounce, had been dead for some time. Uterus and vagina washed out with hot bichloride solution. Patient convalesced without interruption and left hospital on tenth day.

FORCEPS CASES.

Out of one thousand births, labor was terminated by forceps in eighty-three, or one in about twelve, or 8.3 per cent. Their frequent use has saved much maternal suffering, not to say many lives, and greatly reduced the infant mortality. Out of the eighty-three cases, none of the mothers died; of the eighty-four children, seventy-five were living, nine still-born, including premature twins.

Males living.....	50	}	75
Females living.....	25		
Males dead.....	5	}	7
Females dead.....	2		
Premature twins.....	2		2
	84		84

In nearly all the cases the long curved forceps (Dr. Mc-Lane's pattern) were used, both in high and low operations. The blades of this instrument are solid instead of being fenestrated, which renders them more easy of introduction and less liable to mark the child. Experience proves that they do not slip more than the fenestrated variety. In two cases the axis-traction forceps of Tarnier were used.

A tabular statement of all the forceps cases is appended:

TABULAR STATEMENT OF FORCEPS CASES.

No. of Case.	Age.	Para.	Cause of interference.	Duration 2d stage in hrs & minutes	Position in pelvis reached by head.	Children.				Mothers.	
						Living.	Dead.	Recov'd.	Died.		
										M.	F.
1	21	1	Inertia in second stage. .	2 50	Low in cavity	1	..	1	..	1	..
2	35	1	Inertia in second stage..	3 35	Low in cavity	1	..	1	..	1	..
3	20	1	Inertia in second stage..	3 05	At brim.....	1	..	1	..	1	..
4	22	1	Inertia in second stage	11 30	Low in cavity	1	..	1	..	1	..
5	38	1	Powerless labor	11 25	In cavity.....	1	..	1	..	1	..
6	27	1	Powerless labor....	7 49	In cavity.....	1	..	1	..	1	..
7	28	2	Ext's'n of head at outlet.	.. 45	Low in cavity	1	..	1	..	1	..
8	26	2	Inertia in second stage..	7 14	Low in cavity	1	..	1	..	1	..
9	25	1	Inertia in second stage..	4 38	Low in cavity	1	..	1	..	1	..
10	25	1	Contracted pelvis.....	5 35	Low in cavity	1	..	1	..	1	..
11	18	1	Inertia in second stage..	4 30	Low in cavity	1	..	1	..	1	..
12	24	1	Inertia in second stage..	4 15	Low in cavity	1	..	1	..	1	..
13	29	2	Inertia in second stage..	4 50	Low in cavity	1	..	1	..	1	..
14	29	2	Placenta previa.....	.. ..	At brim .. .	1	..	1	..	1	..
15	26	1	Inertia in second stage..	2 45	Low in cavity	1	..	1	..	1	..
16	24	1	Inertia in second stage..	4 40	Low in cavity	1	..	1	..	1	..
17	28	1	Inertia in second stage..	4 ..	Low in cavity	1	..	1	..	1	..
18	25	1	Inertia in second stage..	5 19	Low in cavity	1	..	1	..	1	..
19	25	1	Powerless labor.....	3 35	At brim.....	1	..	1	..	1	..
20	29	1	Eclampsia.....	.. 55	At brim	1	..	1	..	1	..
21	26	1	Inertia in second stage..	4 32	Low in cavity	1	..	1	..	1	..
22	19	1	Inertia in second stage ..	2 ..	Low in cavity	1	..	1	..	1	..
23	29	1	Inertia in second stage..	4 ..	Low in cavity	1	..	1	..	1	..
24	28	3	Contracted pelvis.....	4 35	Low in cavity	1	..	1	..	1	..
25	20	1	Inertia in second stage..	1 15	Low in cavity	1	..	1	..	1	..
26	17	1	Protracted labor	.. 50	Low in cavity	1	..	1	..	1	..
27	35	5	Inertia in second stage..	1 30	Low in cavity	1	..	1	..	1	..
28	24	1	Powerless labor	1 25	At brim.....	1	..	1	..	1	..
29	22	1	Inertia in second stage..	2 45	In cavity....	1	..	1	..	1	..
30	26	1	Threatened eclampsia...	45	At brim	1	..	1	..	1	..
31	24	1	Inertia in second stage..	2 ..	Low in cavity	1	..	1	..	1	..
32	25	1	Inertia in second stage..	12	Low in cavity	1	..	1	..	1	..
33	24	1	Inertia in second stage..	2 35	Low in cavity	1	..	1	..	1	..
34	29	1	Inertia in second stage..	3 45	Low in cavity	1	..	1	..	1	..
35	33	1	Pelvis encroached upon by tumor	5 20	Low in cavity	..	1	1	..	1	..
36	24	1	Inertia in second stage..	2 05	Low in cavity	1	..	1	..	1	..
37	20	2	Protracted labor.....	.. 35	Low in cavity	1	..	1	..	1	..
38	28	1	Threatened eclampsia...	20	At brim.....	1	..	1	..	1	..
39	28	1	Protracted labor.....	2 45	In cavity.....	..	1	1	..	1	..
40	20	1	Protracted labor.....	.. ..	At brim.....	..	1	1	..	1	..
41	19	1	Inertia in second stage ..	3 50	In cavity....	1	..	1	..	1	..
42	20	1	Inertia in second stage..	4 25	In cavity....	1	..	1	1	1	..
43	27	1	Inertia in second stage..	8 20	Low in cavity	..	..	1	..	1	..
44	37	3	Inertia in second stage..	2 25	In cavity.....	..	1	1	..	1	..
45	20	1	Protracted labor.....	.. ..	At brim.....	..	1	1	..	1	..
46	31	5	Prolapse of funis	.. 15	In cavity.....	..	1	1	..	1	..
47	21	1	Inertia in second stage..	4 15	In cavity....	1	..	1	..	1	..
48	23	1	Inertia in second stage..	5 45	In cavity.....	1	..	1	..	1	..
49	23	1	Protracted labor.....	.. 30	At brim.....	..	1	1	..	1	..
50	33	1	Powerless labor.....	2 10	In cavity.....	..	1	1	..	1	..
51	25	1	Powerless labor.....	2 20	In cavity	..	1	1	..	1	..
52	21	1	Eclampsia.....	.. 10	At brim.....	1	..	1	..	1	..

TABULAR STATEMENT OF FORCEPS CASES.

No. of Case.	Age.	Para.	Cause of interference.	Duration 2d stage in hrs & minutes.	Position in pel vis reached by head.	Children.				Mothers.	
						Liv. ing.		Dead.		Recov'd	Died.
						M.	F.	M.	F.		
53	19	1	Powerless labor.....	4 40	Low in cavity.	1	..	..	..	1	..
54	32	1	Powerless labor.....	1 ..	Low in cavity.	1	..	..	..	1	..
55	18	1	Inertia in second stage..	1 20	Low in cavity.	1	..	..	..	1	..
56	20	1	Inertia in second stage..	4 32	In cavity....	1	..	..	..	1	..
57	21	1	Inertia in second stage..	2 40	In cavity....	1	..	..	..	1	..
58	35	4	Inertia in second stage..	5 21	In cavity....	1	..	..	..	1	..
59	22	1	Contracted pelvis.....	.. 20	At brim.....	..	1	..	1	1	..
60	25	1	Powerless labor.....	8 10	In cavity.....	1	..	1	1	1	..
61	42	3	Eclampsia ..	.. 55	In cavity....	1	..	..	..	1	..
62	32	1	Inertia in second stage..	3 18	In cavity.....	..	1	..	..	1	..
63	20	1	Inertia in second stage..	1 40	In cavity.....	1	..	..	..	1	..
64	22	2	Inertia in second stage..	40	In cavity....	1	..	..	..	1	..
65	16	1	Inertia in second stage..	3 ..	Low in cavity.	1	..	..	..	1	..
66	26	1	Inertia in second stage..	4 ..	Low in cavity.	1	..	..	..	1	..
67	25	1	Inertia in second stage..	4 15	Low in cavity.	..	1	..	..	1	..
68	23	1	Powerless labor.....	2 34	Low in cavity.	..	1	..	..	1	..
69	28	1	Powerless labor	2 40	In cavity....	1	..	..	..	1	..
70	22	1	Protracted labor.....	2 17	At brim.....	1	..	..	..	1	..
71	23	1	Protracted labor.	4 40	Low in cavity.	..	1	..	..	1	..
72	24	1	Inertia in second stage..	2 19	Low in cavity.	1	..	..	..	1	..
73	27	1	Inertia in second stage..	.. 18	Low in cavity.	1	..	..	..	1	..
74	30	7	Contracted pelvis.....	.. 45	At brim.....	1	..	..	..	1	..
75	37	2	Powerless labor.....	4 20	At brim.....	1	..	..	..	1	..
76	24	1	Protracted labor.....	.. 10	At brim.....	..	1	..	..	1	..
77	35	2	Powerless labor.....	5 15	In cavity....	1	..	..	..	1	..
78	26	1	Protracted labor.....	.. 25	In cavity....	1	..	..	..	1	..
79	23	2	Inertia in second stage..	2 25	Low in cavity.	..	1	..	..	1	..
80	25	1	Inertia in second stage..	3 02	Low in cavity.	1	..	..	..	1	..
81	26	1	After coming head....	.. 30	Low in cavity.	1	..	..	..	1	..
82	32	2	Inertia in second stage..	1 50	Low in cavity.	..	1	..	..	1	..
83	31	2	Inertia in second stage..	1 16	Low in cavity.	..	1	..	..	1	..

CRANIOTOMY.

The number of cases in which the fetal head was perforated was three, or one in three hundred and thirty-three, or 0.3 per cent. The causes which led to the operation were in two cases impacted brow presentation, in one contracted pelvis. In all the cases the children were dead prior to the operation. None of the mothers died.

CASE I. *Brow Presentation; Impaction; Cephalotripsy.*—Et. 37; ninth confinement. Patient's second labor was difficult, owing to hydrocephalic child; the other seven were easy and normal. Brought in by ambulance, having been in labor five days under the care of a midwife. Labor began with rupture of membranes. On the second day she was

¹ Twin presentation.

able to get up and attend to her household duties; during next two nights pains were very severe, since which time they have gradually diminished. No fetal movements have been felt for four days. Patient's condition on admission exceedingly bad. Uterus retracted, and tightly contracted about body of child; cervix hyperemic and edematous. Highly offensive discharge from uterus. Child presented by the brow, which was impacted; large fontanelle collapsed; child dead. Soon after admission patient had severe chill; rectal temperature 107° ; pulse very rapid and weak. Chloroform was given, the head perforated and afterward crushed with Scanzoni's cephalotribe and extracted. The child was a female of large size. The uterus and vagina were thoroughly washed out with a hot bichloride solution, and a full dose of opium administered. On the following morning the temperature was 95° , and the mother made a rapid recovery without the development of any symptoms. The rapid fall of temperature from 107° to 95° in twelve hours, with no subsequent rise, and the entire disappearance of septic symptoms after the intra-uterine irrigation, are worthy of note.

CASE II. *Brow Presentation; Contracted Pelvis.*—Et. 23; primipara. Patient brought in by ambulance, having been in labor thirty-two hours. Her physician had performed a version for the correction of a transverse presentation, with the result of substituting for it a brow, which was found tightly impacted in the pelvis. Membranes ruptured spontaneously the day before labor set in. Uterus was retracted, and closely contracted about the body of the child. The following measurements were made of her pelvis: External conjugate, six and one-quarter inches; distance between spines nine and three-eighth inches, between crests ten and one-half inches; internal conjugate, two and three-quarter inches. Patient was anesthetized and head perforated through the right orbit. Lusk's cephalotribe was then applied and considerable traction made, aided by external pressure over uterus. When the head had been brought low in pelvis, cephalotribe was removed and another perforation was made through the left frontal bone. The cranioclast was then used for the final delivery of the head; shoulders were

extracted with blunt hook. Slight hemorrhage followed. The vagina and uterus were thoroughly washed out with hot bichloride solution (1 : 10,000). The mother made a good recovery.

CASE III. *Contracted Pelvis*.—Æt. 22; primipara. Pelvis normal in shape, but the internal conjugate diameter was fully one inch shortened. Child presented by the vertex; position L. O. A. Pains occurred at intervals of fifteen minutes, their strength being variable. After eight hours of labor the funis came down into the pouch of membranes in front of head. Patient placed in knee-chest position and cord pushed up into the uterus. Pains continued strong for several hours, then grew weaker. There was no descent of the head. Symptoms of exhaustion developed. No fetal heart sounds could be heard. Patient anesthetized and head perforated. Scanzoni's cephalotribe was then applied and the head delivered. Considerable hemorrhage followed. Uterus was flabby and filled with clots. Hand introduced, clots removed, and intra uterine douche of hot bichloride solution (1 : 10,000) given, which at once stopped the bleeding. Mother made a good recovery.

INDUCTION OF PREMATURE LABOR.

Labor was induced twelve times. The indications for the operation were as follows: Albuminuria in four cases; eclampsia in one case; contracted pelvis in three cases; chorea in one case; placenta previa in one case; death of fetus in one case; accidental hemorrhage in one case. All the mothers recovered. Seven children were born alive; five were still-born, not one of these being viable. Details of these interesting cases are given below:

CASE I. *Chorea*.—Æt. 17, not married; six months advanced in her first pregnancy. Patient enjoyed good health until she was eight years old, when she had an attack of acute rheumatism lasting a month. Three years after she became fretful and at times excited, with twitching in her arms and legs, and since that time she has been choreic. Menstruation began two years ago, and occurred regularly until she became pregnant. The chorea was greatly intensified by her pregnancy; twitchings became almost constant. She slept

poorly and grew very much emaciated, and finally was compelled to remain in bed. On admission patient was anemic and poorly nourished, and suffering from continual jactitation of all the muscles of the body. Pulse rapid, co-ordination impaired, deglutition difficult. Heart normal in size, first sound prolonged; no murmur detected. Breasts large and flabby. Fetal movements distinct, and heart beating 150 per minute. After consultation with Prof. T. Gaillard Thomas it was decided to terminate her pregnancy. The vagina was washed out with a solution of bichloride (1:5,000), and a bougie passed into the uterus seven inches. Labor came on within twenty-four hours, and patient gave birth to a small fetus, the placenta and membranes coming away intact. Hot vaginal douche was repeated after delivery, and her convalescence was uninterrupted. The choreic movements daily grew less, and had nearly ceased by the tenth day when she left the hospital.

CASE II. *Albuminuria*.—Æt. 19; primipara; eight and one-half months pregnant. Patient noticed two months ago that her legs began to swell, and soon after she suffered from headache, vertigo, and visual disturbances. On admission there was considerable edema of the feet and legs, and the prolabia were enormously distended. Urine scanty, smoky, containing sixty per cent of albumin. A dose of calomel was given and the bowels kept freely open each day afterward by sal Rochelle, and patient placed on a milk diet. The albumin steadily increased, until in five days the urine contained seventy-five per cent.

It being deemed best to induce labor, the patient was chloroformed, a bougie introduced into the uterus and kept in place by a vaginal tampon. Labor pains began in half an hour. Chloroform was given continually until the head was born. Duration of labor, twelve hours. After delivery a hot vaginal douche of bichloride (1:10,000) was given and a full dose of morphine administered hypodermatically. The child was a male, weighing six pounds nine ounces; asphyxiated when born, owing to the tightness of the cord around the neck, but resuscitated by friction with alcohol, a hot bath, and insufflation of lungs by catheter. On the following day eight ounces of urine were passed in the morning, containing twenty-five per

cent of albumin, and in the evening forty-two ounces, containing ten per cent. During next twenty-four hours seventy ounces were passed, containing no albumin. Patient left the hospital on the tenth day, well.

CASE III. *Albuminuria*.—Æt. 25; primipara; pregnant eight and one-half months. Urine contained forty per cent albumin. Microscopical examination revealed nothing of importance. No nervous symptoms. Put on milk diet for three days, but quantity of albumin steadily increased. Labor was induced by introducing a bougie into the uterus. Pains began in ten hours afterwards; chloroform was given; labor was without complication, and terminated in fourteen hours and twenty-five minutes from the introduction of the bougie. The child was born alive, a well-nourished female, weighing six pounds ten ounces. Milk diet was continued, and albumin steadily decreased, on the eleventh day being only five per cent. She left the hospital in a few days afterward.

CASE IV. *Eclampsia; Twins; Prolapse of Funis*.—Æt. 41; third pregnancy; advanced seven months. Patient was perfectly well till four weeks ago, when she began vomiting everything she took into her stomach. Had frequent micturition, scanty and burning. Four days ago had a convulsion, which, from the description given, was evidently eclamptic. She had several during the day, and the physician who was called in made hot applications to the head, gave her some chloroform and some "powders." During the next two days she had no convulsions, but suffered from severe headache. On following day she had a return of the eclamptic seizures, and up to the time of admission she had had twenty-six convulsions, one occurring while being brought to the hospital in the ambulance. On admission she was in a state of complete stupor; face flushed, pupils strongly contracted, respiration labored, pulse hard, temperature 98°; face, feet, and vulva edematous. She was taken at once to the delivery room, chloroformed, and a vaginal examination made. Cervix one inch long, soft, but not at all dilated; vagina hot and dry; bladder contained two drachms of smoky urine, which was removed by catheter and found to contain thirty per cent albumin.

The os was dilated moderately by finger, and membranes

ruptured, patient being still kept under chloroform. Considerable liquor amnii escaped; rectal enema then given, followed by a small movement of the bowels. A Barnes' dilator was then introduced. Labor pains began in three hours, bag expelled, and funis was found prolapsed. It was replaced, but came down again with the next pain, and, as it was pulsating well, it was left in vagina. As soon as cervix was fully dilated, forceps were applied and a child delivered weighing one pound seven ounces. The circulation was good, but respiration could not be established. On examination another child was found presenting by the breech. Membranes were ruptured and a foot brought down, and child extracted easily, weighing one pound nine ounces. Heart action fairly good, but no attempt at respiration. Placenta expressed by Credé method; no hemorrhage. Hot intra-uterine and vaginal douche (1:10,000) given. The chloroform was supplemented by acetate of morphine, with spiritus Mindereri and digitalis, every four hours; milk diet. Patient's tongue was very much swollen and bitten badly. On following morning stupor continued; eight ounces urine drawn by catheter; fifty percent albumin; high colored; specific gravity 1.016. Patient cannot see. Stupor alternating with delirium during the day. Next day much better; forty-eight ounces urine passed in twenty-four hours; temperature 100°; able to see and speak. Seventy-six ounces urine were passed on the following day, with only a trace of albumin; general condition good. On thirteenth day she left the hospital. This case illustrates the immediate effect of rupturing the membranes in putting a stop to the convulsions.

CASE V. *Ante-partum Hemorrhage*.—Æt. 36; Xpara; washerwoman, eight and a half months pregnant. Previous labors normal. Patient stated that while carrying one of her children she slipped and fell to the floor; she remained unconscious for some time, and on being put to bed it was discovered that she was bleeding; also had severe pain in the abdomen, but absence of all true labor pains. While being brought to the hospital by ambulance hemorrhage was still going on. Face and mucous membranes very anemic; pulse 138 and feeble; os admitted finger; whiskey given every fifteen minutes, and pulse came down to 120. Patient could not lie

on her back, as it caused severe pain in the abdomen. Membranes were ruptured, binder applied, and liquor amnii evacuated. Bleeding now entirely ceased. Labor came on in six hours, and a still-born child was delivered at the end of ten hours. Several large clots came away after birth of child. Placenta was expressed. No chloroform was given; pulse after delivery 132; no further hemorrhage. Patient left the hospital on sixteenth day. This plan of treatment in cases of hemorrhage occurring late in pregnancy, with a normally implanted placenta, has uniformly stopped the bleeding. It allows the uterine walls to contract, and provokes labor.

CASE VI. *Death of Fetus; Albuminuria*.—Æt. 43; sixth pregnancy, advanced eight and a half months. Patient fell down-stairs ten days ago, since which time she has not felt any life in her child. On examination upon admission, no fetal movements could be distinguished, no heart sounds. Urine contained forty per cent albumin.

Labor was induced by the bougie passed up on the right side of the uterus. Pains began in four hours, membranes ruptured spontaneously high up, and in eleven hours she gave birth to a still-born child which had evidently died at the time of her fall. The albuminuria rapidly disappeared, and in forty-eight hours the urine contained only about one per cent. Patient discharged on tenth day.

CASE VII. *Contracted Pelvis*.—Æt. 26; native of Austria; primipara; pregnancy advanced eight months. When three years old patient had a fall, and has since had scoliosis. She is of short stature. Pelvic measurements as follows: Distance between anterior superior spines, ten and a half inches; distance between crests, eleven inches; external conjugate, six and three-quarter inches. Promontory of sacrum tilted to one side and projecting inward toward symphysis.

Labor was induced by bougie. Pains began in six hours. At the end of twenty-one hours, os being dilated, bougie was removed, a hot douche given, and the membranes were ruptured. Pains now increased in frequency and force, but no rotation of the head took place. Its position was R. O. A. Chloroform was now given, forceps applied, and head delivered in the left oblique diameter. Child a male, weighing eight pounds eleven ounces. Duration of labor, twenty-six

hours fifty-seven minutes. Mother and child did well and left the hospital in sixteen days.

CASE VIII.—Same patient; second pregnancy, advanced a little over eight months. Labor was induced by same method. Pains began one hour after the introduction of the bougie, and in five hours, the os being well dilated, bougie was removed and the membranes were ruptured. Pains were strong and frequent, but the head made little advance, the occiput being directed posteriorly, the head in position R. O. P. Chloroform was given, forceps applied, and the head delivered with the occiput posterior. The child a female, weighing seven pounds. Length of labor, five and a half hours. Patient left the hospital on tenth day with her child.

CASE IX. *Albuminuria*.—Æt. 20; first pregnancy, advanced seven and a half months. Patient had been under treatment for albuminuria before coming to hospital. On admission she was suffering from no well-marked nervous symptoms, but her feet and legs were swollen, and the edema of the vulva was so great that she was unable to walk. Urine scanty, forty-three per cent albumin, no casts. It was necessary to puncture the labia in order to make a vaginal examination. The cervix was soft and dilatable. Labor was induced by dilating the cervix and rupturing the membranes. Pains began soon afterward, and labor progressed regularly until terminated in five and a half hours by the birth of a living male child, well nourished, weighing four pounds ten ounces. Hot douche of bichloride (1:5,000) given. On following day edema of vulva had nearly disappeared, and albumin in urine steadily decreased. She left the hospital on tenth day.

CASE X. *Bright's Disease*.—Æt. 25; first pregnancy, advanced seven months. Patient had suffered for three months from pain in back. Three weeks ago noticed that her urine was very scanty and dark colored. The pain in the back became more severe and her legs began to swell. Was under treatment for a week before entering the hospital. On admission, headache, visual disturbances, vomiting; urine, specific gravity 1.035, ninety per cent albumin, scanty, and loaded with granular, hyaline, epithelial, and fatty casts. Put on milk diet. Infusion of digitalis and citrate of potassa.

At the end of five days, there being no decrease in the albumin, labor was induced. Chloroform was given and bougie introduced. The instrument punctured the membranes high up and liquor amnii slowly drained away. Pains did not begin until evening of next day and were very feeble. On following day they became stronger; cervix now dilated rapidly, the expulsive stage lasting only eight minutes. Child still-born, weighing two pounds ten ounces. Patient was greatly benefited by the emptying of the uterus; left the hospital in ten days, the urine still containing albumin, but only twenty-five per cent.

CASE XI. *Contracted Pelvis*.—Æt. 28; IIIpara; eight months pregnant. Patient delivered "by instruments" of her first child in England five years ago; child was "dead." Two years ago was confined in Bellevue Hospital and delivered by craniotomy by Prof. Lusk. A vesico-vaginal fistula followed, for which she has been operated upon several times. Patient is of small stature, fifty-eight inches in height. Pelvis generally contracted, with following measurements: Distance between spines, nine and one-half inches; distance between crests, ten and one-half inches; external conjugate, six and three-quarter inches. Vaginal canal greatly obstructed by cicatricial tissue; no vaginal cervix, the os being apparently an aperture in the vaginal roof. Labor induced by bougie introduced on right side, and, as it showed a tendency to slip, it was kept in place by a tampon of cotton soaked in solution of bichloride. Slight pains were felt at expiration of six hours. Tampon removed and hot vaginal douche given. Cervix was somewhat dilated. Tampon replaced. On following day bougie and tampon were removed and membranes ruptured. Pains were strong and followed one another in quick succession. Chloroform given. Head descended in transverse diameter. Caput succedaneum very large. Descent of head now ceased, though pains were severe. Temperature 102.6°; pulse 144. Forceps were applied and a living male child delivered weighing six pounds. The moulding of the head was very marked. Duration of labor: First stage, five hours; second, four hours thirty-five minutes; third, fifteen minutes. Mother and child did well and left the hospital on the seventeenth day. The following year patient

returned pregnant for the fourth time, with placenta previa (under which heading her fourth labor is described).

CASE XII. *Placenta Previa; Breech Presentation.*—Æt. 24; primipara; eight months pregnant. Patient brought in by ambulance with this history: Two weeks ago had a severe hemorrhage, followed by two slight ones after interval of several days, and then by another copious one the night before admission. On examination, the cervix admitting the tip of finger, the placenta was found centrally implanted. Os was dilated, placenta separated on one side, both feet grasped and brought down, and patient rapidly delivered of a living child. Placenta quickly followed, with a great rush of fresh blood and clots. There was no hemorrhage during delivery of child. An intra-uterine and vaginal douche of bichloride solution were given, and ergot hypodermatically. Patient made a slow convalescence and left the hospital on the fifteenth day.

PLACENTA PREVIA.

Nine cases occurred, or one in one hundred and eleven, or 0.9 per cent. Of these, five were complete, four partial. Two of the mothers died, or one in 4.5, or about twenty-two per cent. Details of these cases and two others are given below. In one this fatal result was due to delay in obtaining medical assistance, the patient having nearly bled to death before coming to the hospital. In both transfusion was performed.

Four of the children were still-born, five were delivered alive; of the still-births, two were premature, the child not being viable. Version was performed in four of the cases; one child was delivered by forceps.

CASE I. *Contracted Pelvis.*—Æt. 30; fourth confinement. (History of third confinement, vide Case XI., Induction of Premature Labor.) Patient was confined in this hospital in her third labor, prematurely, two years ago. Now again pregnant six months. On examination, pelvis found justo-minor; previous measurements confirmed. Cervix very high, two bands of cicatricial tissue in the upper part of vagina narrowing the canal very much. General condition good. After being in the hospital a few days, patient had a severe hemorrhage, without warning or pain,

twenty ounces of blood being lost. Vaginal tampon was inserted. In two hours tampon removed, when another gush of blood occurred. The cervix was undilated and very high; but placenta could be felt, its attachment being nearly central. A second tampon was introduced; in an hour pains began, tampon became saturated with blood, and some blood escaped from vagina. Tampon again removed, and os found dilated to size of silver dollar, placenta being distinctly felt. Pulse very rapid, 160, and weak. Stimulants were given, the membranes ruptured, and a version performed, both feet being brought down; the funis came down with feet. Notwithstanding pressure made over fundus to preserve flexion of the head, arms became extended, but were brought down with little difficulty, and child extracted, still-born, showing a development of six months. No hemorrhage during delivery. Placenta was removed and uterus contracted well. After delivery patient grew very restless; pulse 160 and thready. Whiskey, ether, and digitalis were given hypodermatically, foot of table elevated, lower extremities bandaged. Temperature 101°. Transfusion was performed, a saline solution being used. Pulse became temporarily better, but soon again flagged; the respiration became irregular, labored, and rapid, restlessness intense, and patient passed into an unconscious state and soon died.

CASE II. *Placenta Previa; Version; Transfusion.*—Æt. 33; ninth confinement. Patient brought by ambulance; had severe hemorrhage four weeks previous, which stopped without treatment. For two weeks past has been bleeding all the time more or less, and during that time has also had three floodings. On admission, pulse 140 and very feeble; respiration shallow, rapid, and labored; completely exsanguinated. Cervix was partially dilated, and placenta felt completely covering the os. Tampon was applied and a rectal enema of brandy administered. As soon as patient rallied a hand was passed into the vagina, the placenta separated from the os, the head pushed up from the lower segment of the uterus, one leg brought down, and the body delivered by traction upon this part. Both arms were extended over the head, causing some delay in the further delivery. Placenta came away spontaneously. During the operation whiskey was

given hypodermatically. Uterus contracted well and there was no hemorrhage during delivery. Radial pulse, however, became imperceptible, though the abdominal aorta could be felt pulsating 178 to the minute. Ether was now given by the skin and a rectal enema of brandy. Pulse improved temporarily. Foot of table was elevated, lower limbs bandaged, bags of hot water placed about the body, and a saline solution slowly injected into the right arm. In spite of all efforts she gradually sank into unconsciousness and died.

CASE III.—Æt. 18; primipara. Brought in by ambulance with vagina tamponed, having lost “a half-bucketful” of blood. Pulse 108 and barely perceptible; very restless; extremities cold. No fetal movements could be felt, no heart sounds heard. Some dribbling of blood in spite of tampon. As soon as she rallied from shock, tampon was removed; cervix was found dilated, and the placenta centrally implanted over os. Vertex presentation. Position R. O. A. Hand was passed into the vagina, two fingers introduced into the uterus and swept around without reaching edges of the placenta. Some bleeding now occurred. The forehead was pushed up, and as the knee came within reach the placenta was bored through on the left side, the knee seized, the leg brought down, and the delivery completed. The child was still-born. A hot intra-uterine douche of bichloride solution (1:20,000) was given. The uterus was held for two hours, and then a full dose of morphine was administered hypodermatically. Mother made a good recovery.

CASE IV.—Æt. 22; primipara. Patient gave a history of having had two floodings. On examination placenta could be made out, occupying the lower uterine segment. A Barnes' bag was introduced, of the smallest size, which was expelled in forty-five minutes; the next larger was inserted through cervix, and came away in one and three-quarter hours; the largest remained in position one hour and thirty-seven minutes. The cervix now being sufficiently dilated, the hand was introduced into the vagina, a bimanual version performed, and both feet brought down. The placenta was expelled before the child, which was still-born. The uterus contracted well and there was no further hemorrhage. Mother made a good recovery.

The plan of treatment of placenta previa adopted is to turn as soon as one or two fingers can be passed through the cervix, employing the well-known method of Braxton Hicks—combined external and internal version—and bringing down a leg, to tampon with it the bleeding vessels. The membranes are ruptured at the placental margin where this is possible; but where this cannot be done, the placenta is bored through and the leg pulled down.

ECLAMPSIA.

Four cases occurred, or 1 in 250. In two the convulsions came on before labor, in two during labor; in one of the latter the fits continued after delivery. One mother died. The urine was albuminous in all the cases. In one (vide Case IV., Induction of Labor) there were twenty-six convulsions, the children—premature twins—being still-born. In the three other cases the children were born living.

CASE I.—Æt. 21; primipara. On admission urine was examined and found non-albuminous. Four hours afterward the membranes ruptured spontaneously, and, with the occurrence of the first strong uterine contraction, patient had an eclamptic seizure lasting five minutes. The urine passed after the fit contained about thirty-five per cent of albumin. Pulse 130, tension high. The cervix was dilated by Barnes' bags, the patient being kept moderately under chloroform. As soon as dilatation was sufficient, forceps were applied, and a living male child, weighing seven pounds, delivered. Convalescence was uninterrupted until the seventh day, when a second convulsion occurred, of an epileptiform character, followed by unconsciousness and stertorous breathing. Pupils contracted, pulse rapid and of high tension. Five hours afterwards a third fit occurred, lasting twenty minutes. Chloral was administered. After this there was no return of the convulsions, and the mother made a good recovery. In this case albuminuria did not develop until after the first fit.

CASE II.—Æt. 21; primipara. Patient had noticed edema of face and hands for three weeks; had some visual disturbances and headache. Her urine, on admission, contained thirty per cent of albumin, hyaline and granular casts. The membranes were ruptured and labor began soon after, the

pains steadily increasing in frequency and force. Fifteen grains of chloral were given and repeated. As os dilated slowly and the fetal heart sounds were faint, chloroform was administered, the cervix was forcibly dilated, the forceps were applied, and a living child delivered without difficulty. Hot douche of bichloride solution (1:10,000) was then given and patient put on a milk diet. Ten hours after delivery symptoms of eclampsia were developed, with great restlessness, and a convulsion occurred, followed in an hour by a second one. Morphine was given hypodermatically and patient placed in a hot pack for three and a half hours. After removal she sank into a muttering delirium, with muscular twitchings all over the body, the eyes being turned up so that only the whites were visible. Pulse 88; temperature 98°; respiration 24. During following day delirium continued, and towards evening she had another fit. Temperature rose to 101°. Urine was freely secreted, having a specific gravity of 1.005, with only a trace of albumin. A dose of elaterium was given and she was again placed for three hours in a hot pack. After this there was no return of the convulsions and no interruption to convalescence. She left the hospital on the sixteenth day following confinement.

CASE III.—Æt. 28; fourth confinement. Patient had been in the hospital nearly two months, acting in the capacity of a servant while awaiting confinement, and her urine examined regularly every week; no albumin had ever been found. After she had been in labor fourteen hours, with membranes intact and fairly good pains, she suddenly had an epileptiform convulsion, which began with a turning-in of the thumbs, rolling of eyeballs, frothing at the mouth, and grinding of the teeth, with tonic and clonic spasms followed by coma. The membranes were at once ruptured, and a living child was born in about five minutes without assistance. Hemorrhage was slight. Ten minutes afterward a second convulsion occurred. Chloroform was administered and the placenta expressed. Eight ounces of urine were drawn off by catheter, containing nearly twenty-five per cent of albumin; microscopic examination revealed the presence of many granular casts. A quarter of a grain of morphine was given hypodermatically. Patient soon had another fit. Thirty

grains of chloral were given per rectum. Convulsions occurred at intervals of about forty-five minutes, and the coma gradually deepened. Dry cups applied over the kidneys and a dose of elaterium administered. Pulse after the eleventh convulsion was rapid; arterial tension high; temperature by rectum, 106°. The fits continued in spite of treatment, there being eighteen in all. Antipyrin was freely given, but the reduction of temperature was only one degree. In a few hours the patient died. The temperature post mortem was 108°.

In this case the albuminuria first appeared after the convulsion.

POST-PARTUM HEMORRHAGE.

The total number of cases of hemorrhage after delivery was fourteen, or nearly one in seventy-one, or 1.4 per cent. All of the mothers recovered, and only one of the children was still-born. In all the cases ergot was given, in the form of fluid extract, by the mouth, and in three cases ergotin hypodermatically. In four cases, after the failure of the ordinary means, vinegar was applied to the interior of the uterus, with the invariable result of arresting the bleeding and securing uterine contraction. The method of using it is as follows: A piece of gauze or absorbent cotton is saturated with the vinegar, carried with the hand into the uterus, and then squeezed, the vinegar flowing over the sides of the cavity, causing the muscle to instantly contract. This is a remedy of the highest value. Ice was used four times by vagina, with not satisfactory results. The hot intra-uterine douche (temperature 120°) was used in every case, and usually found efficacious. In eleven cases the hand was passed into the uterus to remove clots, and also for its stimulating influence upon the uterine muscle. Squeezing and manipulation of the uterus was always employed, and pressure kept up through the abdominal wall for a long time after the cessation of the bleeding, in one desperate case for three hours. The quantity of blood lost varied in these cases from two to four and a half pounds. Special report is given of one case.

CASE I. *Adherent Placenta*.—Æt. 34; fourth confinement. Labor normal and easy, of three hours and twenty-five minutes' duration in the first stage and twenty-five

minutes' in the second. All went well until the child was born, when hemorrhage set in. Repeated efforts to express the placenta were ineffectual. Hand was introduced and placenta found firmly adherent, except at the lower margin. Patient became blanched from the loss of fifty ounces of blood, very restless, and extremities cold. Placenta was detached, but uterus was in an atonic condition, and was only kept contracted by squeezing and pressure. Hot intra-uterine douche given. No further hemorrhage. Foot of table was elevated, hot bottles applied to extremities, lower limbs bandaged, and whiskey given hypodermatically. Uterus was held for three hours before binder was applied. The child, a female, was alive and weighed seven pounds twelve ounces. Patient made a good recovery.

RUPTURE OF UTERUS.

One case occurred, or one in one thousand, details of which are here given.

CASE I. *Transverse Presentation; Impacted Shoulder; Ante-partum Hemorrhage; Rupture of Uterus; Death.*—Æt. 35; fourth confinement. Patient was brought to the hospital by ambulance in a moribund condition, having been in labor three days and suffered from profuse hemorrhage. On admission was still bleeding; no radial pulse; extremities cold. The shoulder was impacted, and the arm and hand protruded from the vulva. Hypodermatic injections of whiskey, digitalis, and ether were given, the shoulder pushed up, a foot seized, and a still-born child easily delivered. Bleeding continued in spite of every means employed to arrest it, and the patient died in twenty minutes after admission. Autopsy revealed a rupture of the uterus, evidently due to the long compression between the pelvis and the shoulder before patient entered the hospital. There was no uterine contraction after delivery, the womb remaining flaccid and atonic.

PUERPERAL MANIA.

There was only one case. The patient's age, 26; third confinement; a native of the East Indies. Her labor was normal; duration, twelve hours thirty-two minutes. Child alive, small, but well nourished.

On the second day after delivery she developed symptoms of insanity, was restless and sleepless, insisted on going home, and had hallucinations and delusions. No pyrexia. It was ascertained from friends that she suffered in a similar way after the birth of her last child, and did not recover for six weeks. She was removed to an asylum for the insane six days after confinement.

TRANSVERSE PRESENTATION; SPONTANEOUS EVOLUTION.

CASE I.—Æt. 31; twelfth pregnancy. Patient began to menstruate when 11 years of age. Has given birth to seven living children, and had three miscarriages in succession. In three of her labors there was a "cross-birth." Brought in by ambulance, having been in labor four hours, during which time a midwife had administered a large dose of ergot, and the ambulance surgeon gave her ten minims of Magendie's solution hypodermatically. The left arm and funis were found presenting and the uterus in a state of tetanic contraction about the child. Chloroform was administered, and delivery took place by spontaneous evolution, the head remaining fixed in its original position, while the fetus rotated about the point where the neck was jammed against the pubes, the body being doubled up upon itself. The labor occupied in all four hours fifty minutes. Perineum and cervix were intact. Child was dead, ecchymosed, not macerated, premature, weighing four pounds two ounces. Hot bichloride douche (1:10,000) was given. Patient rapidly convalesced and left hospital on ninth day.

LABOR IN A VERY YOUNG PERSON.

Miss —, æt. 12 years and 10 months, had hip-joint disease when 5 years of age, and has always been sickly; was an inmate of St. Luke's Hospital for three years, and had several operations performed. Menstruation began in her eleventh year, since which time she has been "regular," being unwell two days. Nine months ago she became pregnant by her brother. On admission, general condition anemic; partial ankylosis of both hip-joints, most marked on left side; pelvis normal; labia majora very small, labia minora large; vulvar orifice diminutive. The labor was natural; the child

presented by the vertex, in the first position. The cervix dilated slowly. First stage of labor occupied twenty-five hours thirty-five minutes; the second, twenty-five minutes; the third, fifteen minutes. The child was a male, weighing



FIG. 3.—Pregnancy with pendulous abdomen.

seven pounds two ounces. The cord was eighteen inches long. Placenta weighed one pound one ounce and had undergone some calcareous degeneration. After delivery the cervix was found to have a deep laceration on the left side; the perineum was also torn and the labia minora lacerated

transversely. The perineal wound was closed by sutures. Patient suckled the child, and made a good recovery. Her infant, being unusually comely, was taken for adoption, and the girl soon afterward returned to school.

LABOR WITH PENDULOUS ABDOMEN.

CASE I.—Æt. 27; third confinement; previous labors normal. On admission, abdominal walls much relaxed, pelvis

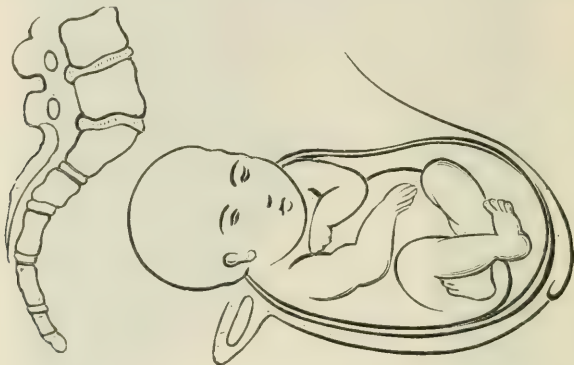


FIG. 4.

normal, uterus hanging down in front of pubes, the fundus reaching to a point opposite the middle of the thigh.

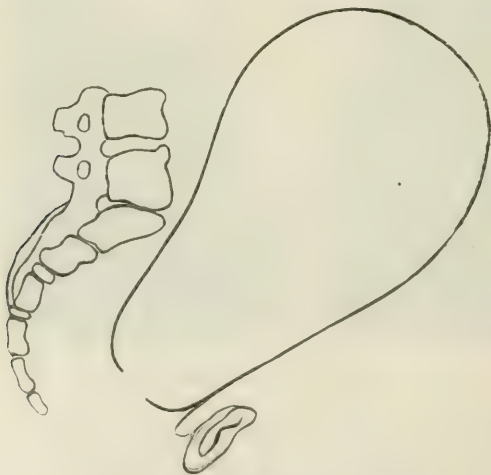


FIG. 5.

The position of the child is shown in Figs. 3 and 4, patient being in the erect posture.

Upon the advent of labor patient was placed on her back and the uterus restored to its normal position. The first stage of labor occupied sixteen and a half hours, the second ten minutes, the third fifteen minutes. Child weighed nine pounds ten ounces.

Fig. 5 shows the position of the uterus after the malposition had been rectified. Mother and child did well.

As there has occurred no case of mastitis or mammary abscess, it may be of interest to describe the management of lactation, since the freedom of patients from inflammation of the breasts is believed to be due to the method of treatment.

The breast binder (Fig. 2) is used on all patients; it holds the breast well up on the front of the chest, and exerts compression if there is overdilatation. It is made of unbleached muslin and pinned from below upward. The child is allowed to nurse, not over twenty minutes, once in two hours during the day and once in three hours during the night. The nipples are washed with a saturated solution of boracic acid before nursing, and again after the removal of the child; they are then rubbed with a few drops of alcohol (fifty per cent), and thickly covered with a powder composed of equal parts of bismuth subnitrate and salicylic acid, and covered with a piece of lint. The mouth of the infant is thoroughly washed with a saturated solution of boracic acid before and after each suckling. Fissured nipples are touched with a solution of silver nitrate (gr. xl. to $\frac{1}{2}$ i.), and if eroded they are protected by the use, during nursing, of Ware's nipple shield.

TABLE OF FATAL CASES.

Chronic Bright's disease.	1
Rupture of the uterus.	1
Placenta previa.	1
Placenta previa with contracted pelvis.	1
Eclampsia.	1
Septicemia.	1
Total.	6

An analysis of these cases shows that in one instance death was due to chronic organic disease and not to labor; in another the patient was moribund when taken from the ambulance; in a third—a case of placenta previa—the fatal

termination was owing to delay in procuring medical assistance, the woman having nearly bled to death before coming to the hospital. There was one death from puerperal septicemia. This patient was admitted in the second stage of labor, in a most filthy condition, having been examined at her home, and, from her symptoms and temperature, was believed to be in a septic condition when she entered the hospital.

There were six deaths among the one thousand cases—one in nearly one hundred and sixty-seven, or 0.6 per cent. Taking into consideration the character of the service; the large number of emergency cases brought to the hospital by ambulance, many of them well advanced in labor; the bad condition of many on admission, owing to neglect or unskilful treatment, the record of mortality is very satisfactory. The result is due to a combination of measures looking to the safety of the patients, each having a certain value of its own, and in the aggregate producing a very low death rate. The small size of the wards, their use in rotation, the scrupulous care exercised to guard against all sources of infection from without and within, the skilful nursing, the free use of antiseptics, the strict cleanliness enforced, and the lavish supply of fresh air, are, it is believed, in great degree accountable for these results.

THE VAGINAL OPERATION IN EXTRA-UTERINE PREGNANCY.¹

BY

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Introduction.—Having been invited by the President of the Chicago Gynecological Society to take part in the discussion upon the question of the treatment of extra-uterine pregnancy at or near term, and having for my associates in the discussion the President himself and Professor Parkes, I have chosen, as the part of the entire subject for my consideration,

¹ Read before the Chicago Gynecological Society December 19th, 1890.

the vaginal operation, elyototomy, as applied to extra-uterine pregnancy. I have made this choice because, three years ago, I met with a case of this kind and resorted to the vaginal method of operation, because at that time I considered it to be the one indicated under the circumstances. I shall first relate the case, and afterward bring the question of this method of operating, as it now presents itself to me, before the Society for consideration and discussion.

I am very much indebted to Dr. William Mackie, of Milwaukee, Wisconsin, for the notes of the following case, as well as for his extremely able management of the after-treatment. Dangerous and troublesome as this always is, I consider the success due only to his unremitting care and attention. The case was operated upon in Milwaukee during the absence in Europe of Dr. Senn, who, on his departure, requested me to operate on the patient.

J. X., 28 years of age, unmarried, had a single intercourse (her voluntary statement) in March, 1886. A month later she experienced dragging pains in the right iliac region. She menstruated regularly until June, 1886, after which menstruation ceased until November 25th. In June she first noticed an enlargement on the right side of the abdomen, which gradually increased in size, the increase being unaccompanied by pain. In November some hemorrhage appeared, which she supposed to be her regular menstruation. It was not periodical, however, as a slight hemorrhagic discharge persisted until the following March. The amount of hemorrhage varied, usually increasing after exercise.

In November, 1886, she first consulted a physician, who diagnosed a fibro-cystic tumor and advised her to enter a hospital. She entered St. Mary's Hospital, Milwaukee, and was under treatment there until the end of January, 1887. During this time the vaginal discharge resisted all treatment, but the tumor did not increase in size. If there was any change, it seemed rather to decrease.

On January 31st, 1887, she was admitted to the Milwaukee Hospital. On examination her condition was found to be as follows: A tumor occupied the abdomen, which, on inspection, appeared to be most prominent to the left of the median line. On palpation the outlines of the fetus could be dis-

tinently felt through the abdominal parietes. The head of the fetus lay in the left iliac fossa, and the body was inclined upward obliquely to the right. On vaginal examination the uterus was found displaced upward and to the right. Douglas' fossa and the posterior lacuna were pressed downward into the vagina, most prominently on the left side, where, through the thin, distended walls, the fetal head could be felt and the posterior fontanelle distinctly made out. Auscultation failed to detect any fetal heart sound, but the placental souffle could be heard over the abdomen most distinctly at a point three inches below the level of the umbilicus and a little to the left of the median line.

The patient had no idea that she was pregnant, and denied, or would not admit, ever having felt any fetal movements. In this respect the patient's statement may be considered perfectly reliable.

About the end of February she had an attack of chicken-pox. On March 2d the vaginal discharge ceased, and on March 6th the placental souffle was inaudible.

On March 13th, 1887, the external genitals having been shaved and thoroughly disinfected, antiseptic injections having been applied to disinfect the vagina, liquid diet and cathartics having been given for several days, together with an enema on the morning of operation, with the able assistance of Dr. Mackie, and in the presence of the members of the German Medical Society of Milwaukee,¹ I operated in the following manner:*

The patient was anesthetized and placed in the lithotomy position. After a median incision through the perineum to enlarge the field of operation, the vagina was distended by Simon's retractors, the left index finger in the rectum marking out the extent to which the tumor was covered by the rectal wall, and a transverse incision made in the posterior lacuna above this point by the knife of a Paquelin cautery. Upon entering the cavity a moderate amount of almost clear, sero-

¹ Verein Deutscher Aerzte aus Milwaukee.

² Dr. Bayard Holmes, of Chicago, accompanied me with some culture substances, with a view to the investigation of the existence of microbes in the fetal sac and the organs of the fetus. A report of these very careful and valuable investigations was read about two years ago by Dr. Holmes before this Society.

sanguinolent fluid escaped, and the head of the fetus presented in the opening. The opening was dilated transversely as far as it was deemed safe, but it was soon ascertained that it would be impossible to deliver the fetus through an opening of this size. I therefore performed craniotomy, and, after emptying the brain substance, introduced a biconcave cranioclast and extracted the head, guided by two fingers of the left hand, slowly and with some difficulty, it being necessary to cut away with bone scissors portions of the cranial bones as they presented in the opening. The delivery of the remainder of the body was comparatively easy.

The umbilical cord was ligated as a precautionary measure, pulsation being absent. The fetal sac was thoroughly irrigated with boracic acid solution. Gentle digital exploration of the sac showed that the placenta was attached high up in the left iliac fossa, that it was apparently of normal size and still adherent all over.

Two large rubber drainage tubes, three-quarters of an inch in diameter, were introduced into the cavity and surrounded by a packing of sterilized gauze thickly dusted over with salicylic acid to which had been added some tannic acid. The vagina was also filled with this packing. The drainage tubes extended to the introitus vaginae, over which a large antiseptic gauze and salicylated cotton dressing was applied.

At the close of the operation the patient was somewhat collapsed, but toward evening she rallied. Pulse 160 and feeble; temperature 100.5°.

March 14th to 16th: Temperature from 99° to 102.5°; pulse 108 to 120. March 16th the gauze tampon was removed from the vagina and cyst. The discharge had then become fetid. The rubber drains were replaced by glass drainage tubes. Evening temperature 103°. After one hour of irrigation with saturated solution of boracic acid, ordered by Dr. Mackie, the temperature fell one degree. A similar irrigation was repeated every three or four hours. On March 17th the discharge was very fetid and sanguinolent, and contained many shreds of broken-down tissue.

March 18th: Discharge coffee-colored, containing much placental debris. Evening temperature 102°; pulse 134. Al-

ternate hourly irrigation with boracic acid and two and one-half per cent carbolic acid solution ordered.

March 19th: The urine was cloudy and of a greenish hue, indicating the presence of carbolic acid. After this a two-per-cent solution of acetate of aluminium was substituted for the irrigations with carbolic acid solution. On digital exploration Dr. Mackie found that most of the placenta was still firmly adherent.

March 24th, eleventh day: Morning temperature normal. A small portion of the placenta came away with the irrigating fluid. March 30th, seventeenth day, the placenta was found to be free at the margins, and Dr. Mackie broke it up with the finger and completely removed it. The placenta, as removed, consisted of edematous connective tissue containing numerous calcareous particles. Many of the blood vessels were also undergoing calcareous degeneration. On the following, the eighteenth day, all the fetid odor had disappeared from the discharge, and a week later the patient was allowed to get out of bed.

On May 25th menstruation reappeared. July 14th the patient was discharged from the hospital. On vaginal examination the uterus was found to be of normal size, but firmly adherent to the left side of the pelvis.

The child was a fully developed fetus at term, and presented no further signs of decomposition than local desquamation of the epidermis and a slightly grayish color of the skin, indicating beginning aseptic maceration. It was still in many places covered with smegma. All the organs were apparently of normal development. It had no odor whatever, and, as Dr. Holmes' bacteriological investigations proved, was in a perfectly aseptic condition.

The later fate of the patient Dr. Mackie has kindly ascertained for me, and reported as follows: About the end of April, 1887, during the convalescence after the operation, symptoms of commencing pulmonary tuberculosis, an apex catarrh, were discovered by Dr. Mackie. The disease progressed gradually into pulmonary consumption, of which the patient died a year ago, that is, two and a half years after the operation.

Remarks.—As to the duration of pregnancy before the

operation in this case, it must have varied between ten and twelve months. If we take the single coitus as the point of departure, the period would be twelve months; if we take the last regular menstruation, it would be ten months. As no fetal heart sound was heard at any time, it is impossible to ascertain the exact time of the death of the fetus. The indications of development of the fetus to full term, however, would make it likely that death occurred in the eighth or ninth month.

At the time when I first saw the patient, in January, 1887, the symptoms were not urgent, and I consequently considered that I had the choice of the time in operation. In this regard I resolved to follow the advice of Litzmann, namely, to postpone operating in cases where the child is dead, and where, consequently, the life of the child does not have to be taken into consideration, until a time when we may be sure of the cessation of placental circulation. As to this question, it was necessary to take into consideration how long after the death of the fetus we might expect the placental circulation to continue. Werth gives this time as ten to twelve weeks; Litzmann, as five to six months. Schroeder saw a case in which there was hemorrhage from the placenta in an operation performed nine weeks after the death of the fetus.

As in my case it was impossible to know the exact time of the death of the fetus, and as there was a symptom present—namely, the placental souffle—which I considered indicative of placental circulation, I resolved to wait until this bruit had ceased, and operate a week later. As seen from the history, there was a slight hemorrhage at the time of the spontaneous detachment of the placenta. The placental circulation, as indicated by the souffle, lasted for at least five weeks after the death of the fetus. The operation was thus performed one week after the supposed cessation of fetal circulation, at a period when as yet no symptoms of fermentative intoxication or sepsis had appeared.

There is one other feature in the symptoms of the case to which I wish to call attention—the fact that the patient was a young primipara. It is usually stated that we most commonly meet with extra-uterine pregnancy either in old primiparæ, or in multiparæ where a long period of sterility has

elapsed after the birth of the last child—five to ten years or more. The patients then unexpectedly recognize the symptoms of pregnancy from the experience of former years, or find the symptoms of the present condition so different that they hardly believe in the possibility of pregnancy. The difficulty of an early diagnosis is naturally much greater in primiparæ.

I will briefly mention in this place another case of extra-uterine pregnancy in a young primipara, which I have recently seen: Mrs. R. S., of Chicago, 26 years of age, always in good health. She menstruated first at 13, and was always regular, and continued so after her marriage four years ago. She had never been pregnant. In February, 1890, menstruation ceased. About the middle of March she had an attack of pain low down in the pelvis which lasted a few days. In April a similar attack of pain in the region of Douglas' fossa (involuntary statement by the patient during exploration) was accompanied by the passage of what she considered to be a clot of blood, by pain and vomiting, which confined her to bed for a week. In May she went into the country. At this time the abdomen had already commenced to enlarge. In June she had a severe attack of abdominal pain and vomiting which confined her to her bed and room for several weeks. After this time the abdomen grew larger and fetal movements were felt almost daily. In September an almost constant bloody discharge occurred from the uterus. In November normal labor was expected, and by the end of the month labor pains came on, but ceased after about a week. Examination in narcosis revealed a condition which led to the diagnosis of extra-uterine pregnancy, and expectant treatment was advised.

I was called in by the patient to verify the diagnosis, and found the following condition: Patient healthy, well nourished, with pigmented areolæ in the well-developed mammae; colostrum could be pressed out of both nipples. The abdomen was un-uniformly enlarged, a round prominence being seen below and to the right of the umbilicus, extending from this point downward and to the left, filling both iliac fossæ, the left iliac fossa being much less prominent than the

right umbilical region. The linea alba was dark brown from pigmentation.

The tumor was semi-solid, elastic, non-fluctuating. No fetal heart sound could be heard, but a distinct placental bruit or souffle could be heard in a round area, four inches in diameter, from an inch below the umbilicus toward the symphysis, the larger half of the area being situated to the left of the median line. No bruit was heard over the remainder of the tumor.

Vaginal exploration showed the vaginal walls to be soft, the vaginal portion of the uterus high up, pushed forward behind and somewhat to the left of the symphysis, soft and voluminous. The fetal head could be felt in Douglas' cul-de-sac as a solid round tumor, not very deep down in the pelvis, and somewhat movable when pressure was made with the other hand over the abdomen. The patient states that from the time of the examination under anesthesia, five weeks ago, fetal movements ceased entirely and the abdominal tumor noticeably decreased in size.

Diagnosis.—Extra-uterine pregnancy; death of child five weeks ago; absorption of amniotic fluid. Position of child: Head in left iliac fossa, face towards the sacrum; dorsal side of child toward the abdominal wall; breech in right iliac fossa, near the umbilicus, below and to the right of the latter. Placenta attached to anterior abdominal wall below the umbilicus. Pulse 80; evening temperature 100°. I advised, as the placental circulation was yet present, as evidenced by the distinct souffle, and as the child was dead, to wait until the cessation of placental circulation before abdominal section, unless in the meantime alarming symptoms should occur.

The course of the case first reported, after the operation, was by no means peaceful, as symptoms of severe sepsis, from which the patient barely escaped with her life, made recovery uncertain for some time and necessitated energetic antiseptic irrigation to such an extent as to make the after-treatment an exceedingly trying task.

I call especial attention to this point, as I consider it one of the great drawbacks inherent to the vaginal operation.

Remarks.—In the following remarks I shall endeavor to review, as far as the literature at my disposal enables me, the

question of the indications for, and the advisability of, the vaginal operation in extra-uterine pregnancy, and its relation to laparotomy for the same condition.

I. *Anatomical Conditions Calling for or Making Possible the Vaginal Operation.*—The vaginal operation is to be considered only when the sac or fetus is located so deeply in the recto-uterine fossa that it pushes the walls of this region downward so as to form a prominent tumor in the posterior wall of the vagina. Further, as stated by Herman, through this vaginal wall, made thin by pressure atrophy, the head of the fetus, which can be recognized by the sutures and fontanelles, the breech or the feet should be felt, so as to make extraction possible without turning. If the softness of the protruding tumor in this place makes it likely that the placenta is here attached and placed between the vaginal wall and the fetus, the vaginal operation should not be done because of the danger of hemorrhage when the incision is made through the placenta.

II. *Frequency of this Location of the Fetal Sac.*—It is generally stated to be a rare occurrence. If we look at Nature's way of expelling an extra-uterine fetus, or the spontaneous evacuation when left to take its course, we might be deceived. An extra-uterine fetal sac, when the seat of suppuration—that is, when it has become an abscess—will travel on its way to spontaneous opening in the direction of least resistance. The intestinal wall is the place of least resistance; thus elimination through the rectum is common.

Hecker (Bandl) found the fetus expelled through the rectum in twenty-eight out of one hundred and thirty-two—that is, in twenty per cent of extra-uterine pregnancies. This frequency, however, does not indicate that the sac was always located deep down in Douglas' fossa, as the opening into the intestinal canal might be located high up above the rectum in almost any part of the tract.

It is more safe to draw conclusions from the frequency of spontaneous opening into the vagina or from the number of vaginal operations on record. The frequency of vaginal operations is given by Hecker as three out of twenty-six, by T. Gaillard Thomas as three out of thirty; that is, respectively, in twelve and ten per cent of the cases.

Spontaneous evacuation through the vagina is rare. Ernest Herman, in his most excellent and scholarly paper on the subject of the vaginal operation, read in the Obstetrical Society of London in 1887, was able to collect from the literature only four cases (Schmitt, Santini, Charleton, and Lusk). To this may be added a case reported by Werth, making, up to date, five cases in all.

An abscess cavity low down in Douglas' fossa is likely to open into the rectum, as is so well known from hematoceles and peri-uterine abscesses. Perforations low down in the rectum have been recently reported by Tuttle, of New York, and Autoriello, of Naples, in which the fetal sac could easily be explored and treated through the opening in the rectum immediately above the anus.

From the above considerations we may conclude that, in about ten per cent of the cases of extra-uterine pregnancy, the location is so low down as to make the vaginal operation possible.

III. *Prognosis of the Vaginal Operation.*—About fifty years ago Campbell stated that elytrotomy gave a better prognosis for the mother than laparatomy. In nine cases of vaginal operation there were five living mothers and four living children, a maternal mortality of forty-four per cent. At this time laparatomy with living or recently dead children had a maternal mortality of one hundred per cent, as in the nine cases cited by Campbell all the mothers died.

We shall now consider for a moment the respective mortality of the two operations as they have developed from that time until now. Laparatomy, with a mortality of one hundred per cent in 1841 (Campbell), will be shown to have progressively a much better prognosis the nearer we come to the present time. In 1880 Litzmann gave a series of forty-three cases with twenty-three maternal deaths, a mortality of fifty-three per cent. His statistics in detail are: Ten laparatomies with living children, nine deaths, or ninety per cent; thirty-three laparatomies with dead children, of which ten were performed one to five weeks after the death of the child, with eight deaths, or eighty per cent, and twenty-three performed from six weeks to a year after the death of the child, with only six deaths, or twenty-six per cent.

The low mortality of the last series caused Litzmann to advise earnestly against operation late in pregnancy, after the death of the child, until a sufficient time had elapsed to insure cessation of the placental circulation, provided that no urgent symptoms, suppuration or peritonitis, made immediate action imperative.

In 1889 Leopold Meyer, of Copenhagen, in his most excellent annual compilation and summary, collected from the literature the operations of the previous year, 1888, twenty-four laparatomies, with eight maternal deaths, or thirty-three per cent. The same author in his summary in 1890 gives the laparatomies for 1889 as thirty-five, with six maternal deaths; that is, a mortality from all laparatomies late in pregnancy of only seventeen per cent.

It will thus be seen that laparotomy for extra-uterine pregnancy at or near term, irrespective of the condition of the placenta and child, has had the enormous decrease in maternal mortality from about one hundred per cent in 1841 to seventeen per cent in 1889. This is in conformity with the modern prognosis of laparotomy for other causes, and is, of course, due almost entirely to asepsis in the operation and after-treatment, to better technique, and to clearer indications for the operation.

If we look for similar progress in the prognosis of the vaginal operation, we will find a vast difference between the latter and laparotomy. In 1887 Herman collected from the entire literature twelve operations in which the child was developed to full term, with seven maternal deaths, or fifty-eight per cent.¹ To these twelve cases I have added one published by Godson and my own case, in both of which the mother recovered. This makes in all fourteen cases, with seven deaths, a mortality of fifty per cent, in cases uncomplicated by any perforation of the fetal sac.

In cases in which spontaneous perforation had taken place into the vagina or rectum, and this condition necessitated immediate vaginal operation, the prognosis, as might be expected, was aggravated by septic invasion into the sac. In

¹ I eliminate from this consideration the cases in which the fetus had died at or before six months, as the delivery of a small fetus is easier, and consequently less dangerous, than that of a full-grown child.

four cases collected by Herman three mothers died. In a case reported by Charles, of Liège, where perforation into the intestines had taken place, the mother also died. This makes a total of five cases, with four maternal deaths, a mortality of eighty per cent.

We will, in conclusion, exclude the last-named class of cases from the comparative prognosis between the vaginal operation and laparotomy.

It will thus be seen that the vaginal operation, even at this date, has a mortality of nearly fifty per cent, laparotomy a mortality of seventeen per cent. These statistics speak strongly in favor of the substitution of laparotomy for the vaginal operation in all cases.

IV. *Dangers of the Vaginal Operation.* 1. *Hemorrhage.*—In operating through the vagina for any disease in the pelvic organs, there is always considerable difficulty in controlling hemorrhage, because the field of operation is narrow, and it is difficult, or even impossible, to secure bleeding vessels if they cannot be brought down into easy reach near the introitus of the vagina.

In extra-uterine pregnancy where the placenta is the source of hemorrhage, it is entirely out of reach in the vaginal operation, and any attempt at local arrest of hemorrhage is therefore impossible. Severe hemorrhage was noted in four out of the fourteen cases, and was the immediate cause of death in two cases (Rupin and Lawson Tait). In three cases the placenta was removed during the operation (Lawson Tait, Bandl, Mathiesen). In one case (Rupin) the placenta was left intact. In the remaining ten cases there was only slight or unimportant hemorrhage. In nine of these cases the placenta was not touched, and in one of these (Chauvenet) it never came away. In the tenth case (Agnew) it lay loose in the cavity and was readily extracted.

Thus it is advisable, in the vaginal operation, that the placenta should be left as far as possible undisturbed, to come away by spontaneous detachment, as Litzmann has advised in the abdominal operation.

Hemorrhage from the placenta is, as we should expect, often seen when the vaginal operation has been performed in the early stages of pregnancy. From Herman's statistics we

find three vaginal operations before rupture of the sac (Thomas, Harrison, O'Hara), with two recoveries and one death. In one of these cases (Thomas) severe hemorrhage was brought on by traction on the cord. In O'Hara's case the placenta was divided by an incision and peeled out without much hemorrhage.

In four operations soon after rupture of the sac (Simpson, Lewers, Goelet—cited from Herman—Bernays), with four recoveries, there was severe hemorrhage in two cases (Simpson and Lewers). In the latter case an attempt was made to remove the placenta ten days after the operation, which brought on severe hemorrhage. In two of these four cases the placenta was removed without hemorrhage.

2. *Retention of the placenta* is likely to cause intoxication from decomposition. It is therefore important to know when we may expect the placenta to come away. In the cases recorded the placenta came away on the second day in one case (Hancock), on the sixth day in one case (Godson), on the sixteenth day in one case (Herman), and on the seventeenth day in one case, my own. In the two latter cases the decomposing placenta caused considerable intoxication and fetid discharge, the fetor ceasing promptly after the spontaneous removal of the placenta.

3. *Delivery of the child through the vaginal opening* is often difficult and sometimes impossible in cases near, at, or after full term. To the fourteen cases cited we must add three cases in Herman's series in which spontaneous opening had taken place, and deduct the cases of Lusk, Edis, Caignan, and Rupin, because the fetus died in these cases at about the sixth month, and was easily extracted—making a total of thirteen cases with full-grown children to be considered, as follows:

(a) *Delivery was impossible* in two cases, and the patients died with the children in the sacs (Smith). Charleton turned, but was unable to deliver the child.

(b) *Craniotomy or Cephalotripsy* was necessary in four cases (Norman, Herman, Godson, and my own), with two recoveries and two deaths (in Godson's case the thorax was also perforated).

(c) *Delivery by turning* is especially dangerous in extra-

uterine pregnancy, as the sac walls are so thin that they will almost always rupture during the manipulations. In the two cases reported (Santini and Bandl) both mothers died.

(d) *Forceps delivery.* Three cases are reported (King, Hancock, and Mathiesen), all of which recovered.

(e) *Delivery by simple extraction.* In only three cases was delivery by extraction easy: Chauvenet's, whose patient lived; Lawson Tait's, whose patient died from hemorrhage; and Agnew's, whose patient is reported to have died from poisoning by permanganate of potassium.

It will thus be seen that the delivery of the child developed to full term, through a vaginal incision, was easy only in three cases, and that more or less difficulty was present in eleven cases. The difficulty of delivery would be a strong argument against the vaginal operation, especially against turning, which is probably always fatal, as Herman has pointed out. We should agree with Herman's seventh conclusion, that if the child cannot be delivered by the vagina without being turned—that is, when the head, breech, or feet do not present—vaginal section is absolutely contra-indicated.

4. *Sepsis.* It is probably absolutely impossible to keep a fetal sac which communicate with the vagina free from sepsis by any surgical precautions as yet known. Drainage, combined with packing with gauze impregnated by iodoform or salicylic acid, or a mixture of salicylic and tannic acid (Werth), has proved utterly insufficient to secure an aseptic course. Although sepsis was not mentioned in all the cases of unruptured sac, we find that in five (Hancock, Mathiesen, Godson, Herman, and my own) of the seven cases which recovered, frequent daily or even hourly irrigations with antiseptic fluids, such as Condy's fluid, iodine water, carbolic acid solution, and boracic acid, were resorted to, thus indicating strongly that a more or less grave sepsis was present.

In the seven cases of death there were two from peritonitis (Bandl and Norman); two from sepsis (Edis and Caignan); and in the remaining three cases in which death occurred from hemorrhage or poisoning, sepsis is, of course, not excluded.

In the rare instances where there is no sac, and the fetus consequently lies freely movable among the intestines—as in

King's case, which recovered, and in which the intestines protruded on the third day; and in Lawson Tait's case, which died from hemorrhage, and in which the intestines protruded immediately after extraction of the fetus—it is possible that we would meet with similarly favorable circumstances for the immediate closure of the abdominal cavity as we find after vaginal extirpation of the uterus, when a simple iodoform gauze drain is sufficient to procure an aseptic course from the immediate closure of the abdominal cavity. This, however, is a rare condition, and in a great majority of cases we have to deal with the fetal sac, which must necessarily be infected through the vaginal opening, and the patient thereby exposed to an intoxication or sepsis which is beyond control and the outcome of which is at least uncertain.

V. *Vaginal Operation for Suppurating Fetal Cavities.*—When the fetal sac has been transformed by suppuration into an abscess cavity, and disintegration of the soft parts of the fetus has partially or entirely destroyed them, leaving finally only the bones, the conditions are much more favorable, and the treatment has the same indications and prognosis as in abscess cavities in the small pelvis of any other origin.

In eleven cases cited by Herman there were nine recoveries and only two deaths. In this class of cases the vaginal operation is strongly indicated and is preferable to laparotomy. Where the abscess presents in the posterior cul-de-sac there is, comparatively speaking, no difficulty in delivering through a small vaginal opening, and no danger of infection to the peritoneal cavity, which might easily be exposed to sepsis by a laparotomy for this condition.

Vaginal operation early in pregnancy, although not included in the consideration of this discussion, I shall mention in a very few words. It is to-day uniformly condemned by all authorities. Herman has collected six cases, to which may be added a case reported by Bernays, making seven in all. Three of these were operated upon before rupture of the fetal sac, with two recoveries and one death; and four operated upon at the time of, or soon after, rupture, all of which recovered. Although the mortality in these cases was only fourteen per cent, dangerous symptoms of sepsis, requiring frequent antiseptic irrigation, were present in five of the

seven cases (Thomas, Harrison, O'Hara, Goelet, and Bernays), in one of which (O'Hara's) fatal peritonitis occurred.

However, a retro-uterine hematocele may have had its origin in the rupture of a fetal sac, and a vaginal incision has in a few cases revealed a small fetus as the proof of such an origin. In an instance of this kind in which a thorough diagnosis cannot be made, the vaginal incision is to be regarded as being made for a retro-uterine hematocele rather than for an extra-uterine pregnancy.

In all cases where a diagnosis of extra-uterine gestation early in pregnancy can be made before the time of rupture of the sac, the vaginal operation should never be resorted to, inasmuch as total extirpation of the fetal sac and tube cannot be accomplished by vaginal incision. When the diagnosis is made after rupture of the sac, and operation becomes necessary, the vaginal operation is also out of the question, for the following two reasons: The seat of hemorrhage, the ruptured Fallopian tube, cannot be reached and treated properly, nor can the accumulated blood in the abdominal cavity be properly evacuated. Thus hemorrhage and sepsis cannot be guarded against. Abdominal section is in such cases the only rational and safe way of operating, as all the necessary indications can be complied with by this method.

To return to the subject of to-night, "The Anatomy and Treatment of Extra-uterine Pregnancy at or near Term," I desire to present in regard to the vaginal operation the following

CONCLUSIONS.

1. In cases where the fetal cavity is still aseptic, the vaginal operation exposes the patient to danger of sepsis in the fetal sac which cannot be guarded against. Abdominal section gives far better means of protection against septic infection.

2. Hemorrhage from the placenta cannot be controlled by the vaginal operation. By abdominal section, on the other hand, ligation of the internal spermatic and uterine arteries, as devised by Olshausen, might in some cases be accomplished as a means of checking hemorrhage from the site of a removed placenta, in the territory supplied by these vessels. Abdom-

inal section further permits of ligature *en masse* of the bleeding portions when the placenta has been divided at the place of incision.

3. Delivery of the child at full term is usually difficult, and thus dangerous to the mother, by the vaginal operation, but easy by the abdominal operation.

4. If the fate of the child is to be considered, the vaginal operation must be abandoned and replaced by abdominal section.

5. When suppuration has set in, in an extra-uterine pregnancy presenting low down in the small pelvis, and the placental circulation has ceased, the vaginal operation may be considered in comparison with the abdominal operation.

6. The vaginal operation is strongly indicated in old suppurating fetal sacs, with disintegrated fetus presenting in the vagina.

Final Remarks.—The vaginal operation is condemned by a number of modern authors, among whom may be mentioned Werth, Olshausen, Lawson Tait, Thornton, and others. At the Gynecological Congress at Freiburg in June, 1889, Olshausen condemned the vaginal operation, as well as drainage into the vagina after laparotomy in such cases.

As an advocate of the vaginal operation Landau stands isolated. He stated that he had performed thirteen vaginal operations and lost only one mother. As his cases have not been published in detail, this material is not available for consideration here, and can have no influence on the conclusions above stated.

BIBLIOGRAPHY.

BANDL, *Deutsche Chirurgie*, Lieferung 59. Berlin, 1886.

HECKER, *ibid.*, page 70.

T. GAILLARD THOMAS, *New York Medical Record*, September, 1882.

T. GAILLARD THOMAS, *New York Medical Journal*, September, 1884.

ERNEST HERMAN, *Obstetrical Transactions*, vol. xxix., 1887, page 429.

CAMPBELL, *Ueber die Schwangerschaft ausserhalb der Gebärmutter*. Aus dem englischen übersetzt von Ecker. Carlsruhe und Freiburg, 1841.

WERTH (Kiel), *Beiträge zur Anatomie und zur operativen Behandlung der Extrauterinschwangerschaft*. Stuttgart, 1887.

WERTH and VEIT, *Transactions of Gynecological Congress in Freiburg*, 1889. *Archiv für Gynäkologie*, Band 35, Heft 3, page 511.

TUTTLE, *New York Medical Record*, 1887.

AUTORIELLO (Morisani's Clinic, Naples), *Wiener klinische Wochenschrift* No. 7, 1889, page 127.

LITZMANN, *Archiv für Gynäkologie*, Band 16, page 323, 1880. Zur Feststellung der Indication für die Gastrotomie bei Schwangerschaft ausserhalb der Gebärmutter.

LEOPOLD MEYER, Copenhagen, *Litteratur Oversigt. Gynäkologiske og Obstetristiske Meddelelser udgivne af Prof. F. Howitz*. Band 7, Heft 1, 2, 3. *Ibid.*, Band 8, Heft 1, 2.

C. GODSON, Case of Extra-uterine Fetation. *Obstetrical Transactions*, vol. xxix., 1887, page 499.

CHARLES (Liège), *Centralblatt für Gynäkologie*, 1887, Band 10, page 165.

BERNAYS (St. Louis), History of Two Cases of Extra-uterine Pregnancy. *Annals of Gynecology*, January, 1888, page 151.

INTESTINAL OBSTRUCTION.¹

BY

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THE following case will answer as a text for a few remarks which I wish to offer on the importance of making a diagnosis and locating the position of intestinal obstructions, and of managing the greatly distended intestines during the operation which may follow. As gynecologists of to-day, we are expected to do laparatomies for other conditions than those absolutely depending upon pathological changes in the uterus and its appendages. We must remember that probably one-half of the deaths which follow our laparatomies are due to intestinal obstruction, resulting from and caused by adhesive inflammations around the pedicle, or around wounded intestines. We must remember, also, that the female is particularly prone to have pelvic peritonitis, and that therefore we must expect that the larger number of cases of obstruction of the bowels will be among women.

The following history has been furnished by Dr. Coxe, house surgeon:

Mrs. F. D., age 47 years, married twelve years, duration of illness nine days, admitted to Woman's Hospital December 20th, 1890. Diagnosis, uterine fibroid and obstruction of

¹ Read before the New York Obstetrical Society January 20th, 1891.

bowels. First menses at 13 years, last three years ago. One child; normal labor, though tedious; nursed the child. Patient has had three abortions. Has had the tumor for three years. It has given her no trouble whatever, excepting a sense of fulness. One week ago the patient was taken with cramps in the abdomen, and nausea and vomiting, since which time she has had no movement of the bowels, though she has taken considerable physic and many rectal injections. Patient has been taking morphine constantly for pain. General health has always been good. Urine normal. Of late there has been some slight loss of flesh. She attributes these conditions to her change of habits, as she has been compelled to work nights. (Dr. Fuller, her physician, has, since her death, learned from a friend of the patient that she had noticed a slight rectal discharge and a slight odor to the discharge.) I placed the patient in the knee-chest position and gently crowded the uterus and tumor above the brim, and a tube twelve inches long was introduced into the rectum. No gas escaped, and the tube could not be passed further. I believed the tube touched the obstruction above, and some distance from the uterine tumor. One-quarter grain doses of calomel triturations were given every hour for eight hours. In the meantime, the patient was placed in the knee-chest position as often, and as long, as her strength would allow. At the end of eight hours a saline laxative was given and later a high saline enema, and retained, by pressure over the anus, for fifteen minutes. On its expulsion a large amount of gas was forced out with great violence. No fecal matter came away. There was decided relief, however. Later, when the same plan was followed, no gas, even, escaped. After consultation with Drs. Bache Emmet, Nicoll, and Talbot, it was decided to do a laparotomy.

The patient had retained considerable fluid food and vomited but once during the last twenty-four hours.

December 22d, 1890, laparotomy, Dr. Nicoll and house staff assisting. Usual antiseptic precautions. Ether used. Incision in linea alba five inches in length. Peritoneum found in a congested condition, intestines greatly distended with gas. A large aspirating needle was used to puncture the most distended portion of the intestines, and the gas allowed to escape. A

Lembert catgut suture was used to tightly close these punctures. A careful search was made for the obstruction, but it could not be found, as the large fibroid presented at the incision and filled the pelvis and abdominal cavity. The abdominal incision was lengthened to eight inches, and hysterectomy was performed. The tumor was easily withdrawn from the pelvis, pedicle clamped, transfixed with pins, and cut off. By relaxing the clamp the vessels were found and ligated. The pedicle was sutured to the lower angle of the incision. Pure carbolic acid was applied to the stump. A rectal tube was passed as far as possible up the bowel. The intestine was now run over carefully with the finger. The tube could not be felt through the intestines. At last this tube was removed, and it was found that it had doubled upon itself. Another was substituted, and it passed above the brim and was felt by finger, and the hand was directed by it to a firm, hard band in the colon four inches above the sigmoid. Through this constriction not even gas could be forced. By all present the mass was pronounced malignant. About three inches of intestine were now excised. The lower end of the intestine was tightly sutured and disinfected, and dropped back into the abdomen. The other end was quickly sutured to the incision, just above the stump, leaving one inch protruding beyond the abdominal wall for a spur. During the operation the intestines had been outside of the abdominal cavity, covered with hot towels soaked in warm, sterilized water. They were then returned to the abdominal cavity. In all suturing of the stump and of the intestine, catgut was used. The abdominal cavity was then thoroughly flushed. Incision closed with silkworm gut. Time of operation, two hours. Patient put to bed in poor condition. Free stimulation was used, but her pulse never improved. She died in two hours.

I shall not detain you with a careful, methodical study of all the causes which may lead to an obstruction of the intestines. I wish, however, to urge the importance of this subject to the gynecologist of to-day. We must remember how fatal these conditions are, when not properly treated, and how often the accident occurs even in our own practice. I shall consider the subject from the standpoint of my own clinical experience.

We are all aware that the more common obstructions are frequently located in the rectum and sigmoid flexure; the former caused by stricture and cancer, and the latter caused by twisting or volvulus. The ascending colon is generally the seat of fecal impaction. In the ileo-cecal region it is due to exudation around, and inflammation of, the appendix. In the region of the junction of the common bile duct and the duodenum, this is due to inflammation from the presence of gall stones, travelling towards the intestine. In children it is due to intussusception at the junction of the ileum and cecum, and in the colon, and at the sigmoid flexure. After laparotomy the site of the obstruction will generally be found around the neighborhood of either pedicle, but exactly at what part of the intestines cannot easily be determined, except imperfectly by the character of the vomited fluid, and the general constitutional disturbance caused by the obstruction.

The symptoms of obstruction of the bowel are the symptoms, more or less pronounced, of strangulated hernia—local pain, tympanites, vomiting, more or less anxious expression of face, restlessness, increase of pulse, pain steadily increasing unless anodynes are given, vomiting, changing from retching to vomiting of bilious matter, and later often of stercoraceous matter, constipation. The temperature is not affected as early as the pulse. Later, collapse.

The possibility of being quite certain in our diagnosis of the condition which causes the obstruction, will depend upon our ability to appreciate the symptoms present, together with the history given by the patient. A careful ocular and manual inspection should be made of the abdomen. Even the ear should be used to learn where the gases of the intestine are moving, and thus help to decide what portions of the intestines are paralyzed or closed.

I will hastily call your attention to the symptoms and diagnosis of the more common forms of obstruction.

1. *Acute Strangulated Hernia*.—Of course every case of obstruction simulates, with more or less regularity, this most common of accidents. The symptoms are well known to you all, but often are so carelessly weighed that a hernia may not be suspected or discovered. Given the usual symptoms of strangulation or obstruction of the bowels, we ought first of

all to search for an inguinal, femoral, or umbilical strangulated hernia. This possible condition should ever be before our eyes when we first visit our patients suffering from obstruction.

2. *Cancer of the Rectum.*—This is a very common form of obstruction. It can always be located. Eighty per cent of malignant intestinal diseases occur in the rectum. It should always be suspected when certain symptoms of chronic obstruction are present, such as pain in this region, a heavy, uncomfortable sensation, sacral pains shooting through the gluteal muscles or down the thighs, diarrhea alternating with constipation, general emaciation, frequent desire to go to stool. If the disease is high up the pain will be less, and if low down, more intense. Discharge of pus occurs later. Vomiting comes on later; hiccup and vertigo during the last stage. In stricture of the rectum all symptoms will be less severe. A diagnosis can be made easily in all such cases. Even the finger will often reach the disease when low down, and a bulb-shaped tube will locate it, and before complete closure will tell the extent of the disease, and the amount of the stricture present.

(The tube consists of a small, ovoid hard-rubber bulb, varying from one-quarter to two-thirds of an inch in diameter, and one and one-half inches in length, perforated through the centre in its long diameter. This is attached to a handle—also perforated in its long diameter—by means of small, strong steel wire from ten to fifteen inches in length. There is also a soft-rubber tube which completely covers this small wire, and this rubber tube is attached to the ovoid hard-rubber bulb and to the distal end of the perforated handle. The steel wire gives elasticity to the instrument. The rubber tube covering the wire, and connecting with the bulb and the handle, allows any fluid to be injected into the rectum or descending colon. The bulb end is easily forced along in the track of the intestine, and any slight constriction of the rectum, or descending colon can be located and measured by it. The tube does not bend upon itself, as do most rectal tubes. It does not cost much. It can be made antiseptic quickly. It is specially useful in detecting stricture of the lower bowel.)

The shape of the fecal matter often leads to suspicion of the disease before complete obstruction has taken place. Our treatment must depend upon the site and extent of the disease. When the disease is low down and not extensive, it should be dissected out; when high up or very extensive, a lumbar colotomy, or a laparotomy, should be performed; when seen before complete obstruction has taken place, the patient must be taught to use the bougie with unfailing regularity.

3. *Lead Poisoning*.—Obstruction due to lead poisoning should not be forgotten when we have any obscure case of obstruction. The well-known appearance of the belly, the location and character of the pain, the typical signs around the gums, the chronic constipation, make the diagnosis generally very positive. The treatment by means of sulphate of magnesia and faradism is so certain, that we cannot long be in doubt, after such treatment is instituted.

4. *Impaction of Feces*.—Obstruction due to impaction of feces is a not uncommon condition, but one that requires more than a passing word. It occurs more frequently with women than with men, and in those past 50 years of age. The condition of chronic constipation is almost always present. The patient gives often a history of having passed bullet-shaped fecal matter. Vomiting comes on late. There is often a distinct tumor felt in the region of the ileo-cecal valve, which is not tender. There is later some form of mild septic fever from reabsorption of fecal gases, etc. There is often the history of previous attacks. Under an anesthetic, which should certainly be given in each obscure case, the tumor will be found hard, movable, pitting on pressure, independent of the liver and in front of it. High enemata of oxgall, or solutions of sulphate of magnesia, or glycerin, diluted, following proper cathartics, at the same time that faradism is used and massage is practised, will cure this disease. *Opium pro re nata*, but only as absolutely needed, should be given.

5. Obstruction due to *peritoneal bands* comes on suddenly, and the symptoms are generally as well marked, and generally as alarming, as those of strangulated inguinal hernia. And this is especially so when the small intestines are occluded. The distention is most marked when the lower bowel is involved. It is a very simple accident, and we all wonder that

it does not occur more frequently than it does, since we find, in our abdominal sections, so many adventitious or false bands. The veins, being more easily compressed than the arteries, are quickly engorged, and the intestine, when once caught, cannot easily liberate itself. The alarming symptoms are soon manifest, and nothing, as a rule, can relieve the patient until a laparotomy allows the cutting of the false bands. Nearly similar symptoms are manifested when, instead of a false band, the cause of the accident is a slit in the omentum, the result of a sudden jar, or a previous laparotomy. Here, too, the symptoms come on suddenly. In obstruction due to false bands there will be the history of a previous peritonitis. The symptoms will be so alarming that the wise physician will summon aid within twenty-four hours, and will resort at once to laparotomy as soon as help arrives.

6. *Intussusception*.—Obstruction due to intussusception is generally found in young children, and often follows dysentery, or some exhausting diarrheal disease. There is great tenesmus when the accident occurs in the descending colon or rectum. There is the passage of some mucus and blood, but absolutely no fecal matter. The vomiting is often sudden, without nausea; the symptoms rapidly grow more severe. The tumor can sometimes be felt in the rectum, on introducing the finger. Injection of gas, slowly but surely, has often relieved this dangerous condition. Opium should be given *pro re nata*. If such a course is not followed by improvement, an early operation is imperative.

7. *Volvulus*.—Obstruction due to volvulus is more frequent in males over 40 years of age. Symptoms of this condition are rapid and extreme distention, followed by alarming collapse. Pains are exceedingly severe from the first, vomiting less marked, and the disease grows rapidly fatal. It is far more frequently situated in the region of the sigmoid flexure, and may often be mistaken for hernia, on this side, when the patient is stout, and the abdominal wall above the inguinal ring is thick. An anesthetic should be given, if a diagnosis is not quickly made. If a high injection of warm water or gas, while the patient is in the knee-chest position, does not liberate the intestines at an early hour, laparotomy must be resorted to at once.

8. We who do much laparotomy work see one other form of obstruction most frequently. I refer to *obstruction following laparotomy*. Here we cannot tell what intestine is involved; we only learn that after a secondary laparotomy. We are quite certain, however, of finding the obstruction somewhere near the region from which we removed the tumor, unless the intestines were accidentally injured in the operation, and adhesions had resulted. Vomiting comes on gradually, the distention slowly; the pain cannot be located, owing to the great tenderness all over the abdomen. The more pronounced the pain and vomiting, and profound the effect on the patient, the more sure we are that the small intestine is being strangulated around the exudation. If the symptoms come on very slowly, we may hope that our saline laxatives may prevent additional exudations, and the peristalsis may be restored, and the intestine may not be completely closed. When the respiration and pulse, however, slowly creep up, the vomiting becomes more frequent, the distention slowly extends, the countenance gradually becomes more and more anxious, even though, as is often the case, the temperature remains not over 101° , we must operate. Our results have not been so promising as to encourage us to a resort to a secondary laparotomy without due evidence that it is demanded. When, however, the symptoms are acute, no response following our high enemata, our saline laxatives, etc., we must not wait, but do a secondary operation at once, or the patient will die.

It requires good judgment and clinical experience to be able to determine the etiology of obstructions which may be due to these more common causes just enumerated. To be able to locate the condition is perhaps a still more difficult matter, requiring rare and well-trained talents. We must not forget to question the character of the onset, the character of the pain, the character of the vomited fluid, the character of the pulse—which gradually creeps upward, whether the temperature corresponds or not—the character of the distention, the amount and character of physic taken, and, last, we must know just how far a rectal tube can be passed, and how much fluid can be retained, by gentle pressure, in the rectum and colon. By weighing all these different symptoms, we can gen-

erally decide which part of the intestine is involved, and act in such a manner as will be safest for the patient.

In this case just recited, the natural supposition of all was, that the fibroid tumor itself had pressed upon the intestines, and caused the obstruction. I supposed so myself, until I had pressed the tumor out of the true pelvis while the patient was in the knee-elbow position, and a rectal tube had been passed in full ten inches. The obstruction was then located above the brim. But had I suspected a cancerous disease just above the sigmoid flexure, I might have done a lumbar colotomy and given the patient a far better chance of living for a few months. I was sure, however, that the obstruction was not caused by direct pressure of the fibroid on the descending colon, or rectum; and I was equally sure that the obstruction was not far from the rectum, as only about two pints of fluid could be easily retained in the bowel. I was greatly surprised, however, after I had opened the abdomen and pushed the tumor to the right side, and had passed a rectal tube, inserted for ten inches, that I could not at once feel the tube and discover the obstruction. It was not known then, that the tube had bent upon itself in the rectal pouch, and had not passed above the brim at all. Later, after the hysterectomy, another rectal tube was passed up, and my hand found it and it was a guide to the obstruction. This accident can occur easily, and because of it the tube may not only injure the rectal pouch, but fail of its purpose in serving as a guide for the operator's hand along the colon to the seat of the disease. And later, and a most important use, it allows the gas to pass off through it.

With reference to the best manner of managing intestinal distention when laxatives and the customary treatment by medication, rectal enemata, etc., have been faithfully tried, we have been urged to resort to puncturing the intestines through the abdominal wall. Some cases have been reported where the relief and cure quickly followed this plan of treatment. (See Ogle's "Memoirs," London, 1888, p. 61, cases I., II., III., etc.). With the wonderful strides which have been made in abdominal surgery during the last ten years, and in intestinal surgery during a still shorter period, we are all quite willing to agree with Sir William McCormick, Matthews Dun-

can, Wood, Allingham, Tait, Treves and Jessett in Europe, and Da Costa, Grey, and in fact all the leading surgeons in the United States, that puncture before laparotomy may relieve and be followed by a cure. Still it is not sure of being even a relief, and certainly it may result in additional peritonitis. We may have recourse to puncture to bridge the patient over until we can do a laparotomy, or, when the disease permits, a lumbar or inguinal colotomy. We must remember that the eye and nose cannot detect the degree of virulence of the poison of fecal matter and fecal gases. The putrefactive changes which go on in one patient when the bowels are obstructed, are not necessarily the same in the next patient; and the ptomaines which may be present in the intestines in one case, may not be present in the next. The one may be quite innocuous when coming into the peritoneal cavity, and the other patient, with a fecal gas less offensive, and apparently less putrid fecal matter, may be profoundly virulent. We must also remember that many patients have the abdomen punctured, and, as death followed, no report was made of such cases. I believe, therefore, that when obstruction is not overcome after the usual preliminary trials, carried out in a methodical, judicious, and gentle but thorough manner, we have both the evidence of our own experience, and the preponderance of evidence from the most experienced surgeons, that we should operate by opening the abdomen. When the disease or obstruction is in the region of the sigmoid flexure, lumbar colotomy is the better method. When the tumor or obstruction can be felt in front, through a thin abdominal wall, we should cut down over the tumor, and do such operation upon the intestine as will restore it to its original integrity, without making an artificial anus. When the obstruction cannot be located, the median line is always preferable for incision. The experience of surgeons, which I have given, who have punctured through the abdominal wall, leads us to be willing to accept the advice of some of our best laparatomists to incise the intestine when great distention is present, during, or after laparotomy. I have watched with deep interest the different discussions on the surgery of the intestines which have been published during the last few years. I have occasionally incised, and have punctured the intestines to allow the escape of gas after opening

the cavity; I have accidentally wounded the intestine and so allowed the escape of the intestinal fluids, but in none of these cases has there been any trouble due to such procedure and such accident. We have, too, the advice to puncture, or incise, as may be necessary, after opening the abdominal walls, in Smith's "Abdominal Surgery," page 379; Jessett, British Gynecological Trans., November, 1890; Allingham, Homans, Senn, and many others. And many of you who listen to me, have practised it. I desire particularly to *advocate*, during a laparotomy, this method of incising the intestines if excessive gas is present, and if the rectal tube does not reach it and allow it to pass off through it. I believe that it is far better than to trust to keeping the intestines at a normal temperature, after evisceration has been practised. We must remember that, if we follow the teachings of those who have done this work often of late—Bull, Abbe, Wyeth, and many of our own fellows—we shall open the intestine, evacuate its contents, and close the wound in five minutes, and do it without leaving any sepsis in other parts of the intestinal tract. I have no new method of enterorrhaphy to advocate in closing the intestinal wound. Gregg Smith's method is satisfactory. Kelly's method may be better; I have not tried it, however (see last number Johns Hopkins Transactions). I believe good catgut will be a sufficiently strong suture material, because only a moderate wound is to be made.

My purpose has been (1) to advocate the necessity, or the importance, of locating the obstruction in the bowel when possible; (2) I believe this can be done with much more certainty than is supposed in many cases; (3) to urge the general practitioner to send for the experienced laparatomist at once, when great distress is present from obstruction of the bowels; (4) that puncture of the abdomen is justified at such time when death seems imminent; (5) when there is great distention of the bowel after the abdomen has been opened, the aspirator needle, or, better still, the scalpel, should be resorted to at once, to allow the escape of such gas and intestinal contents, before an effort is made to search for the obstruction.

A CASE OF EXTRA-UTERINE, RETROPERITONEAL PREGNANCY IN THE SEVENTH MONTH.¹

BY

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(With one woodcut.)

As my contribution to this evening's discussion, I beg to report a case of extra-uterine, retroperitoneal pregnancy that is specially noteworthy on account of its clinical course, anatomy, diagnosis, and treatment.

History (Dr. F. C. E. Mattison).—Mrs. L. S., 36 years 6 months old, born in Altenberg, Saxony, coachman's wife; 5 feet 3 inches in height, 130 pounds in weight. Family history good; mother living, father died from septicemia following injury to the hand.

Married two years ago (September 23d, 1888). Date of commencement of last menstruation, April 15th, 1890. First pregnancy. Course of early pregnancy distinctly abnormal: patient said she was in bed at least three days out of every seven from pain and weakness.

Dr. Mattison first saw the patient September 23d, 9:30 A.M., when he found a woman, with a large abdominal tumor, in a condition closely bordering on collapse. She was cold, pallid, nearly pulseless, and vomited incessantly. Pulse 150, temperature 97° F.; relative suppression of urine (3 ounces non-albuminous urine by catheter). Mind clear; patient complained of difficulty in breathing rather than of positive pain. The patient and her friends informed Dr. Mattison that the alarming condition had developed gradually during the past three days, apparently in consequence of a day's washing. Dr. Mattison concluded that the abdominal tumor was the pregnant uterus. Upon vaginal examination he found the vaginal portion of the cervix uteri unchanged, and perceived

¹ Read before the Chicago Gynecological Society December 19th, 1890.

no bleeding from the os. Upon the application of the usual remedies—dry heat and diffusible stimulants—the patient did not react.

At 4 P.M. I saw the case in consultation with Drs. F. E. Waxham, Bayard Holmes, and F. C. E. Mattison. The woman showed such ominous signs of considerable internal hemorrhage and of severe shock that I thought death certain. Her mind, however, was clear, and Dr. Mattison informed us that her general condition was not more unfavorable than in the morning.

The fact of pregnancy was evident from the appearances of the mammæ alone, without reference to the changes in the pelvic genitalia, or to the history of amenorrhea in a woman previously healthy and perfectly regular. But the nature of the pregnancy and the cause of the bleeding were obscure.

Inspection revealed a single, symmetrical abdominal tumor as large as the gravid uterus at the seventh month, with an arcuate fundus. Each horn extended upward to the lower border of the false ribs, while the median furrow dipped downward to a point four centimetres above the umbilicus. The size and shape of the tumor were suggestive of twin pregnancy. On palpation the walls of the tumor were so tense and unyielding that it was impossible to outline any contained object or to practise ballottement. Alternations in density—that is, intermittent uterine contractions—were notably absent. The tumor was absolutely flat on percussion. Maternal heart tones and pulsations of the aorta were transmitted with uncommon clearness and distinctness over all areas, but fetal heart beats and uterine souffle could not be detected. Upon examination per vaginam it was evident, from the conical shape of the vaginal portion of the cervix uteri and from the persistent hymen, that the woman was a primipara. The vaginal portion of the cervix, three centimetres in length and unchanged, seemed relatively hard for such an advanced pregnancy; it was displaced to the right of the median line, and the os externum was closed. The vaginal vault, symmetrically convex downward, and apparently filled out by the head well engaged within the pelvic cavity, was directly continuous with the vaginal portion, and presented the sensation of equal resistance in all directions. Upon with-

drawal of the finger it was found to be stained with blood, although there was no external hemorrhage. The bladder contained one ounce of non-albuminous urine.

The diagnosis seemed to me to lie between intra-uterine hemorrhage from premature detachment of the normally implanted placenta, and hemorrhage into the placenta of an extra-uterine pregnancy, with the weight of evidence in favor of the former view. Rupture of the normal uterus, or of the adventitious uterus of ectopic gestation, could be definitively excluded by reason of the single, symmetrical, perfectly circumscribed character of the tumor, and on account of the absence within the peritoneal cavity of fluid or unusual solid objects. In this opinion the other consultants concurred.

Any operative interference at this time was clearly contra-indicated—first, because the woman appeared to be *in articulo mortis*; and, second, since the tumor had persisted of the same size at least since morning. There was nothing to be gained and very much to be lost by the immediate removal of such a mass of blood already extravasated. Accordingly, at Dr. Holmes' suggestion, we determined to transfuse and to await developments. Twenty ounces of the physiological salt solution (0.6 per cent) were injected by means of Allen's surgical pump into the subcutaneous connective tissue about the inferior angles of the scapulæ and over the lumbar region. The insertion of the needle caused little pain, and the injection of the solution and its dispersion by rubbing only slight discomfort. About one-half hour was occupied in the act of transfusion, and at the end of this period no apparent effect on the circulation was observed. Dr. Holmes thought there was an increase in the volume of the pulse, but I was unable to perceive any change. Dry heat to the body was continued, and rectal alimentation (six ounces of peptonized milk every eight hours) was recommended.

Then we left the patient in the care of Dr. Mattison, with the understanding that in the event of death we should be summoned to the autopsy, or, in case of sufficient reaction, to the woman's active relief. 10:30 P.M.: Pulse 150, temperature 97° F.

Second Day, September 24th, 7 A.M.: Pulse 130, temperature 100 $\frac{2}{3}$ ° F.; two ounces of urine by catheter that con-

tained neither sugar nor albumin. The woman rose from her bed without aid and walked across the floor. 10:30 A.M.: Consultation. Improvement was marked, in consequence of, or independent of, the transfusion and rectal enemata. No apparent change in the abdominal tumor nor in the vaginal portion of the cervix uteri; slight oozing of blood from the os externum. Upon careful and prolonged physical examination of the abdomen, no additional facts were discovered. The woman was still too feeble to bear a severe operation; she had plainly gained during the night; moreover, the case looked more and more like an example of accidental hemorrhage, so we determined to wait. Enemata of peptonized milk, and ammonium carbonate per os, since the vomiting had ceased, were recommended. 10 P.M.: Pulse 120, temperature 99° F. Patient complained of pain in the region of the abdominal tumor, but no contractions were perceptible and no effect upon the vaginal portion of the cervix was apparent. Morphine hypodermatically.

Third Day, September 25th, 7 A.M.: Pulse 100, temperature $99\frac{2}{5}^{\circ}$ F.; two ounces of urine by catheter, that contained neither sugar nor albumin. 10:30 A.M.: Consultation. General condition much better than at any time since we saw the case. No change in the abdominal tumor nor in the vaginal portion. Again, for the third time, we discussed at length the propriety of exploratory dilatation of the cervix and of exploratory laparotomy, but, in view of the apparent nature of the case and of the distinct and progressive gain, we decided to wait. We left the case in Dr. Mattison's care, with the understanding that we should be called in the event of any change for the worse. 9:30 P.M.: Pulse 98, temperature $99\frac{2}{5}^{\circ}$ F. Voided voluntarily six ounces of urine since previous night.

Fourth Day, September 26th: Pulse 100, temperature 99° F. Voided eight ounces of urine, passed a comfortable night, moved about in bed, and sat up in a chair while the mother made up the bed. Drank with relish large quantities of peptonized milk. No change in the abdominal tumor nor in the vaginal portion of the cervix. 9 P.M.: Pulse 100, temperature normal; urine, ten ounces since morning.

Fifth Day, September 27th, 8 A.M.: Pulse 96, temperature

normal; twenty ounces of urine. Patient passed a comfortable night, but complained of some pain in the back and in the region of the lower abdomen. No change in the abdominal tumor nor in the vaginal portion of the cervix. 9 P.M.: Pulse 100, temperature normal; thirty-six ounces of urine.

Sixth Day, September 28th, 8 A.M.: Pulse 96, temperature $99\frac{2}{5}^{\circ}$ F.; twenty-six ounces of urine. Patient passed an uneasy night, restless, and complained of pain. Slight bowel movement. One teaspoonful and one-half of compound licorice powder was followed by five free discharges of fluid feces; complained of considerable abdominal pain. No local change. 9 P.M.: Pulse 120, temperature 101° F.; 40 ounces of urine; slight discharge of blood per vaginam.

Seventh Day, September 29th, 8 A.M.: Pulse 112, temperature 101° F.; twenty ounces of urine. Bowels moved four times during the night, with pain and the discharge of large quantities of fecal matter. No local change. 9 P.M.: Pulse 120, temperature 102° F.; bowels moved four times since morning, but pain slight.

Eighth Day, September 30th, 8 A.M.: Pulse 104, temperature $101\frac{3}{4}^{\circ}$ F.; great pain. 9 P.M.: Pulse 114, temperature $103\frac{2}{5}^{\circ}$ F.; great pain.

Ninth Day, October 1st, 8 A.M.: Pulse 116, temperature $102\frac{3}{5}^{\circ}$ F. Passed a comfortable night. Rigor at 7:30 A.M. 10:30 A.M.: Consultation. I saw the case for the fourth time with Drs. Waxham, Holmes, and Mattison. Marked changes had occurred in the abdominal tumor. It had increased slightly in size and was notably emphysematous; on percussion the sound, while not absolutely flat, was still not resonant as in physometra. Even on this occasion it was impossible to outline the body of the fetus. Vaginal portion of the cervix uteri absolutely unchanged; slight oozing of blood from the os externum.

Plainly the woman was the subject of septic infection that had its origin in the abdominal tumor, and the indication for active treatment seemed absolute. We discussed exploratory abdominal section and exploratory dilatation of the cervix, and decided in favor of the latter. The patient's critical

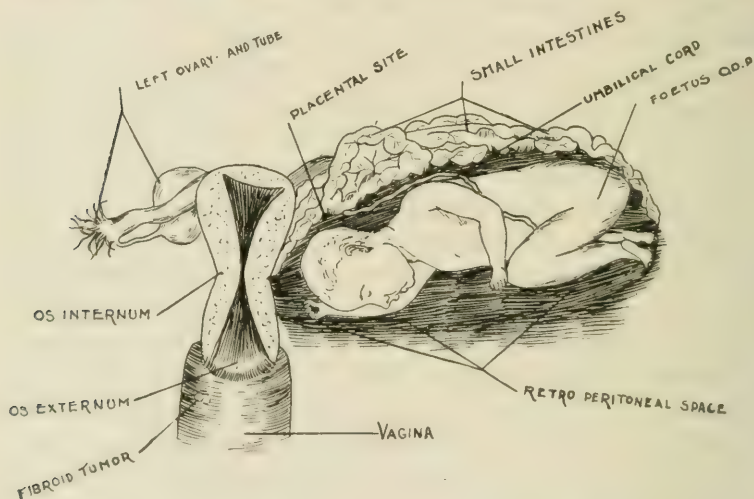
condition was fully recognized, and her friends were informed of the possibility of death during the operation.

Operation, 11 A.M. Ether narcosis. Patient placed on a table, and, with all antiseptic precautions, I dilated what I thought to be the cervix uteri by means of Hegar's bougies and Robert Barnes' water bags. Upon the introduction, without violence, of a Hegar bougie No. 6 through the os externum, a free discharge of liquor amnii stained with blood occurred. Uncommon difficulty was encountered in the use of Barnes' bags. Finally, however, with Dr. Waxham's aid, I succeeded in passing two fingers into what I thought was the cavum uteri, recognized the fetal head, with the occiput to the right and posterior, O. D. P. Failing to turn by the method of Braxton Hicks, the canal was further dilated, the right hand introduced, and version by the feet with immediate extraction easily accomplished. The child, male, was dead and macerated, its tissues emphysematous. The placenta, detached for one-half, was found to be firmly adherent for the rest of its area to the site over the right antero-lateral wall of the cavity. Several bands of dense connective tissue were sawed through by the hand, and the after-birth delivered. During version I felt the promontory of the sacrum and the pulsations of the aorta with alarming distinctness; but it was only after delivery of the placenta that I recognized the fact of extra-uterine pregnancy. At this time I felt the posterior surface of the normal uterus, heretofore covered in part by the placenta.

The woman was put to bed and dry heat applied; death followed in a few moments. The duration of the operation was one and one-fourth hours; the total quantity of blood lost slight. I attribute death immediately to the combined effect of trauma and ether.

Autopsy.—A limited post-mortem examination was permitted and at once performed. Peritoneal cavity dry, free from blood; a few adhesion bands, evidently old, stretched between adjacent coils of small intestine, but the structures were not matted together in any important degree. The mesentery, unfolded, and the small intestines greatly separated by the unfolding of the mesentery, together with the unfolded right broad ligament and the normal uterus, consti-

tuted the anterior covering or wall of a large sac that extended from the pelvic floor below to the transverse mesocolon above. The thickness of this anterior wall was not much greater than that of the mesentery and flattened-out small intestine, except in the region of the placental site—the under surface of the right broad ligament and the upper posterior surface of the uterus. Here the wall was one centimetre in thickness, and contained a broad stratum of non-striated muscular fibre, the only visible sign of an adventitious uterus. Upon the removal of the anterior covering, the



posterior wall was found to be the usual undifferentiated sub-peritoneal connective tissue.

The cavity thus bounded was chiefly abdominal, to a lesser degree pelvic. It was extra-uterine and retroperitoneal. In addition to old blood clots and fragments of the fetal envelopes, the cavity contained several lumps of maternal feces; two perforations through the inferior border of the small intestine were discovered, probably due to pressure atrophy.

The uterus, slightly deflected to the right of the median line, enlarged to a degree corresponding with the tenth week of pregnancy, presented the following measurements: length, equally distributed between corpus and cervix, 10 cm.; thickness of the wall of the corpus, 2.5 cm.; of vaginal cervix, 1 cm. The uterus was situated directly in front of the child's

head. Examination showed that the lower mouth of the canal, through which the fetus had been delivered, was the os externum, while the mouth communicating with the sac was a rupture through the posterior wall of the lower uterine segment, at a point where the tissue was as thin as blotting paper. In other words, I had passed the bougie per os externum through the posterior wall of the supravaginal portion, thinned out from pressure atrophy. The decidua vera, partly detached, had not been extruded from the cavum uteri.

The left ovary and Fallopian tube were apparently normal; the tube was pervious; no corpus luteum. The right ovary and tube were completely lost in the gestation sac.

The placenta, pretty well disintegrated by the force of the original hemorrhage and by subsequent changes, showed a few white infarcts and several bands of tough connective tissue that firmly bound the organ to its site over a considerable area. The after-birth was also studded with old coagula. Fragments of chorion and amnion were visible, attached to the placental edges. The fetus, male, well developed, macerated, 1,165 gm. in weight, 40 cm. in length, corresponded to the seventh month of pregnancy.

The items in the history of this melancholy case that I beg to call particular attention to are:

I. This case presents a typical example of the classical picture of extra-uterine pregnancy, in that the anomaly occurred in the person of an old primipara that had been married for some time before the event of pregnancy. It is true, the right tube and ovary were involved, instead of the same organs on the left side; but then the dissection of specimens collected within recent years shows that the election of the left side is not of such relatively frequent occurrence as was formerly believed to be the case.

II. The anatomical findings indicate that the pregnancy, originally tubal or ovarian, developed in the cavity of the right broad ligament. Later the ovum passed up into the abdomen, lifting up the peritoneum and unfolding the mesentery, still maintaining its extraperitoneal character. Death of the fetus, from hemorrhage into the placenta, probably occurred about the time and in consequence of the day's wash-

ing, already mentioned. The bleeding, however, took place within a closed sac, and the hemorrhage ceased when the pressure of the extravasated blood became equal to the general blood tension of the mother. Infection doubtless resulted from perforation of the small intestine, although, of course, other sources are possible.

It is of interest to note that the cervix persisted in its original virginal length. That is to say, the anatomical os internum was situated midway between os externum and fundus, in a uterus hypertrophied under the influence of extra-uterine pregnancy to a degree corresponding to the tenth week. In pregnant uteri of the same date, the cervix is both relatively and absolutely shorter. (Compare Braun, "Der männliche und weibliche Körper im Sagittalschnitt," Leipzig, 1872; Benckiser, "Beiträge zur Anatomie des schwangeren Uterus," Stuttgart, 1887, Taf. i.). Does not this fact seem to indicate that during pregnancy the supravaginal portion of the cervix uteri is dilated from above downward, or, in other words, that the lower uterine segment is derived, in part at least, from the cervix?

III. As regards *diagnosis*, all the medical men connected with the case must feel some degree of chagrin over the failure to locate exactly the pregnancy. Still, the fact that four medical men, not without experience in this class of cases, and presumably qualified, deliberately, and independently of each other, formed the same opinion, though an erroneous one—this fact indicates that the case presented extraordinary difficulty. Possibly, also, this fact may add to the instructive value of this communication. Furthermore, the circumstances under which we saw the case were unfavorable to an accurate diagnosis. We first saw the woman in a state closely bordering on collapse, and her precarious condition at a later period seemed to contra-indicate the exposure and fatigue incident to a more thorough examination. Then, too, on account of the characters of the abdominal tumor already mentioned, we were utterly unable to elicit, by the usual methods of physical exploration, sufficient signs to constitute a positive diagnosis. During the course of the case, however, there were presented certain significant signs that deserved clearer recognition and more exact valuation. Some of these significant signs were:

1. The abdominal tumor was absolutely quiescent throughout the period of observation. The woman, indeed, at times complained greatly of abdominal pain, but this symptom was not attended by rhythmical contractions, with their characteristic changes in the contour and consistence of the tumor. In the severest cases of "accidental hemorrhage" some sign of uterine contractions is almost always manifested within twenty-four or forty-eight hours after the occurrence of the accident.

2. The maternal heart tones were transmitted uncommonly clearly and distinctly over all areas of the tumor, and the uterine souffle was absent.

3. The vaginal portion of the cervix uteri persisted relatively hard and unchanged in length throughout the eight days of observation. Every one is familiar with Goodell's off-hand rule: "When the cervix is as soft as one's lips, the woman is probably pregnant; when it is as hard as the tip of one's nose, the womb is most likely empty." In this case the vaginal portion was softened, yet not to the degree commonly observed at the seventh month. The persistence in the length of the vaginal portion—absence of effacement and dilatation—was still more significant. In all the cases of "accidental hemorrhage" that I have observed, marked changes in the vaginal portion appeared and progressed within the first twenty-four hours after the accident.

4. The vaginal portion of the cervix was distinctly deflected to the right of the median line.

The evidence accumulated from these four signs, although negative in character, was still of a degree to overbalance the evidence in favor of "accidental hemorrhage," which, as before remarked, consisted in the fact of advanced pregnancy, of the single, symmetrical form of the tumor, of the apparent direct continuity of the abdominal and pelvic tumor, of the vault of the vagina convex downward and filled out by the head. At least the negative evidence ought to have deterred from a therapy based upon an absolutely positive and exclusive diagnosis.

The fact that the hemorrhage through the os externum was an insignificant oozing might be interpreted as equally in favor of both "accidental hemorrhage" and extra-uterine preg-

nancy. I have encountered examples of the former anomaly in which scarcely a drop of blood escaped into the vagina.

Finally, an exploration per rectum was not made. Such an examination, I believe, might have revealed the real nature of the case.

IV. Under the topic of *treatment* I wish to mention: (1) The apparently important effect of the subcutaneous injection of the physiological salt solution. The total quantity injected—twenty ounces—was absorbed without local reaction within twelve hours after the operation. At the same time, however, peptonized milk was exhibited per rectum. (2) Two procedures were discussed when we first saw the woman and at each subsequent meeting. These were, in view of the uncertain diagnosis, exploratory abdominal section and exploratory dilatation of the cervix uteri. In the light of the autopsy, laparotomy would have accomplished nothing except to reveal the nature of the case, because the small intestine was so generally distributed over the anterior wall of the sac, because the product of conception was retroperitoneal, and because the retroperitoneal connective tissue had been extensively dissected up in all directions. It would not have been possible even to ligature, on the peritoneal side, the uterine, ovarian, and spermatic arteries before their distribution to the placenta, for the reason that the relations of these vessels were so distorted that they were not found after prolonged search during the autopsy. Exploration through the cervix, therefore, was indicated, and it was only unskilful or unfortunate use of the sound that led to the serious mistake in the operation. Under the conditions of the case, the vaginal operation for advanced extra-uterine pregnancy would have been the operation of election, even in the presence of the risk of bleeding from the placental site.

It may be urged, in criticism of the management of this case, that the golden opportunity for operation was presented and lost when the patient had recovered in some degree from shock and hemorrhage, but had not yet become infected. In reply to this, I desire to say that while the actual time of the operation was unfavorable, still it was the only time we were summoned to the case when the indication for interference was absolute. As a matter of fact, I believe the woman

received a necessarily fatal injury when the original hemorrhage into the placenta occurred, and when the retroperitoneal connective tissue was so extensively injured.

2330 INDIANA AVENUE, December 19th, 1890.

DELAYED DENTITION.¹

BY

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Washington, D. C.

THE following cases are somewhat rare, and the symptoms which are present are rather unusual:

CASE I.—The first case of retarded dentition which occurred in my practice was in 1873. The child was 20 months old when its first tooth appeared—one of the lower incisors. Two days previous to this the child became ill from a severe diarrhea; with the exception of this attack, from which it soon recovered, it had enjoyed good health. It had been raised on the bottle. Dentition was completed at $4\frac{1}{2}$ years and in the regular order. The fontanelles closed at the usual period (17 months). No symptoms or history of rickets or syphilis. The parents were perfectly healthy.

CASE II.—This child, a little girl, cut its first tooth at 22 months—a lower central incisor; it was quite sick with a severe entero-colitis, and continued ill for five days. This was in September, 1883. The child had been regularly nursed from the breast. The teeth appeared very slowly, and it was five years and six months before dentition was completed (*i.e.*, the deciduous teeth). She is now 8 years and 5 months old, and has but one of the permanent teeth, which appeared in January last. All of the deciduous teeth are sound.

The fontanelles closed at the usual period, which showed that the process of ossification was normal. She has enjoyed uninterrupted good health up to this period. The father of

¹ Read before the Washington Obstetrical and Gynecological Society March 21st, 1890.

the child is a robust and healthy man; the mother rather delicate and of a nervous temperament, although she has no organic trouble. The child has been well since the completion of dentition.

CASE III.—This child was the younger sister of Case II. She was 27 months old when she cut her first tooth, which was on January 2d, 1890. She had been well, with the exception of a slight attack of indigestion last May. On January 14th, 1890, I was called to see the child, who was suffering greatly from diarrhea, with severe pains in the bowels. I gave an astringent mixture. The gums were very red and swollen, especially over the region of the first left lower molar tooth. January 24th she was taken with convulsions which resembled clonic spasms. There was difficulty in talking and swallowing; the thumbs of both hands were turned inward on each palm. There was no pyrexia or heat about the head nor flushing of the face. I ordered bromide of potassium and ammonia with elixir ammonii valerianatis and water to be given every three hours. January 25th, next visit, I noticed that the child had lost the use of the entire left side; sensation was perfect. At this visit, on examining the gums, I found that the first molar had erupted, and with a little rubbing the whole crown was exposed. January 26th: The clonic spasms had continued through the night at intervals of ten minutes; they were so regular and distressing that the father came to my house to seek relief at 2 A.M. for the little sufferer. During these convulsions the child never became unconscious. The convulsions ceased as morning approached, but the hemiplegia remained for one week. The child gradually recovered under the bromide treatment, and is well at present, but I am afraid she will have a second attack when she cuts the other molars. Besides the great delay in dentition, the most irregular and anomalous features were the eruption of the first molar before the upper incisors, and the singular spasms present in the case. Generally, in cases of difficult dentition, we have congestion of the brain with violent convulsions, great heat about the head, and high fever; the bowels are often affected either with diarrhea or constipation.

Cases of dentition delayed over twenty months are extremely

rare. Dr. S. S. Adams has reported two hundred and eighty-eight cases of dentition occurring at the Children's Dispensary Hospital in this city, in children between the ages of 6 and 24 months old, and out of these cases one went beyond 24 months. This is not a fair percentage, as we will not observe delayed dentition in more than one child in nearly a thousand. Dr. Keating says of retarded dentition: "It is very common for the beginning of dentition to be deferred for several months after the normal period. In some rare cases teething does not commence until the second year or later." He also states that he had three children who did not cut their first teeth till the 25th, 26th, and 27th month respectively. Jacobi mentions one case of a boy whom he had under observation until the age of 2 years and 10 months, at which time he had not a tooth or a symptom of approaching dentition.

Many authors claim that where the fontanelles do not close at the usual period, it shows a want of ossification and development, and that delayed dentition often follows where this condition is observed. They also assert that this condition occurs only in children where there is a previous history of rickets or syphilis. The cases just reported did not, as far as I could ascertain, present any symptoms of either of these diseases. All of the children walked and talked at the usual period (from 12 to 14 months).

Henoch says that dentition, even at the normal period, may also be accompanied by abnormal local symptoms which must be regarded as due to irritation by the teeth. There are a great many diseases that dentition can occasion and be the exciting cause for, such as congestion of the brain, hemiplegia, and inflammation of the bowels. In Case III. the child had great difficulty in talking and swallowing, showing some irritation of the trigeminal nerve.

There is a tendency among a large number of physicians to treat dentition very lightly, and they assert that some of the profession, the mothers and old grannies, hold to the old and exploded idea that teething is the cause of nearly all the ills which children are heir to. Now, I do not wish to be understood as attributing all ailments of children to dentition, but I must admit that a great many of the diseases of childhood are due directly or indirectly to dentition. Dentition, though

a physiological process, is yet, like utero-gestation, one of constant irritation.

Dr. Webster, of Massachusetts, places the percentage of infantile mortality in that State from dentition alone at three per cent, and says that probably many deaths from other diseases are indirectly caused by it. Now, if he had placed it at ten per cent he would have been nearer the correct figure. The principal causes of delayed dentition are rickets, syphilis, and anything which will delay nervous development or retard ossification. Some claim that children who suffer from any eruptive fevers during the development of the secondary teeth are destined to suffer from inferior enamel and early decay and loss of the permanent teeth; also, poorly fed children and those using sugar teats regularly develop inferior teeth.

REMARKS UPON PARAMETRITIS, WITH ESPECIAL REFERENCE TO ITS PATHOLOGICAL SIGNIFICANCE.¹

BY

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AN historical study of the literature of this affection would furnish abundant proof of the truth of the observation that the human mind arrives at truth slowly, and that advance in one period is followed often by retrogradation in another.

This thought has been forced upon me by the perusal of the most recent exposition of this theme, from the pen of Dr. Richard B. Maury.² While entertaining the highest opinion of the ability of this writer and his conscientious endeavor to seek the truth, I am compelled by my careful studies to dissent from his conclusions. "I maintain," he remarks, "that the time has come when the term cellulitis should be abandoned in connection with non-obstetric pelvic inflammations.

¹ Read before the New York Obstetrical Society February 3d, 1891.

² AMERICAN JOURNAL OF OBSTETRICS, January, 1891.

It is a misnomer; no such pathological condition is known to exist, unless to a *minor* degree as dependent upon a *major* peritonitis, and its existence then, even if a matter of importance, is impossible of diagnosis."¹ The main support of his doctrines he derives from the writings of Bernutz, while the views of Lawson Tait, Polk, and Wylie tend, in his opinion, still further to fortify his position.

Among modern cultivators of this branch of medicine, no one has arisen with an intellect more piercing or a sagacity more profound than Sir James Y. Simpson; yet listen to his words, which are as true now as when spoken: "The fact is,"² he observes, "that while the doctrine of the inflammation of the cellular tissue in the pelvis, after its revival in England by Doherty and Churchill, was carried too far by the enthusiasm of Nonat in France, M. Bernutz committed an equally grave error by rushing much too blindly in the opposite direction. The truth, as it usually does, lies between the extremes; and while we may easily believe that M. Bernutz has verified his diagnosis more frequently by autopsies in cases of pelvic peritonitis, it must not be imagined that, on account of the rarity of such post-mortem verification, cases of perimetritic cellulitis are uncommon. On the contrary, I believe that the very fact of the lesion being so frequently extraperitoneal is the reason why we so seldom have an opportunity of completing the diagnosis in the way mentioned. No one can for a moment doubt that pelvic peritonitis is a much more serious and grave lesion, and one much more likely to produce a fatal issue, than inflammation of the cellular tissue of the pelvis, and of that alone. While, on this account, we have seldom an opportunity of confirming the existence of a perimetritic cellulitis by post-mortem inspection, such a case as that reported by M. Simon goes far to prove not only the possibility of its existence, but even the probability of its frequent occurrence."³ We are all agreed that in the preponderating majority of cases of parametritis in its acute

¹ Loc. cit., p. 13.

² "The Works of Sir J. Y. Simpson: Diseases of Women," D. Appleton & Co., 1877, p. 95.

³ Bulletins de la Société Anatomique de Paris, xxiii. année, No. 20, p. 234.

form, the origin must be sought in the puerperal condition; but that there is a non-puerperal acute parametritis cannot be denied in the face of the facts elicited by modern investigation. The chronic form so graphically described by Freund is not usually of puerperal origin. To Virchow we owe the pathological anatomical facts on which the present doctrine of puerperal parametritis is built. If it were true, then, that there is no such thing as a non-puerperal parametritis, it would be simply incomprehensible how that extensive and complicated structure constituting the connective tissue of the pelvis could escape inflammatory processes after wounds and injuries of the cervix and vaginal mucous membrane which had been infected. *A priori* reasoning would lead us to infer what clinical and anatomical investigation have proven, that such inflammation *does* occur. The clinical evidence alone is demonstrative. The same group of symptoms which characterize a case of puerperal parametritis, and the same objective condition elicited by bimanual palpation, are found in the one case as in the other. Does any thoughtful man seriously doubt that such eminent gynecologists as West, Simpson, Graily Hewitt, Barnes, Emmet, Thomas, Spiegelberg, Schroeder, Fritsch, Winckel, Martin, possessed such little diagnostic acumen as constantly to mistake a perimetrie for a parametric exudation? Doubtless the differential diagnosis is difficult enough at times, but, as a rule, this is not the case. It is the exceeding merit of W. A. Freund that he has demonstrated, by his beautiful and exact studies, the peculiarities as well as the pathological dignity of the pelvic connective tissue.

As he expresses it:¹ "A significant rôle is imparted to the connective tissue functionally by virtue of its union with three hollow organs exposed to extensive changes of volume and place, and in part subjected to the most active metabolism. Owing to this union it takes ready and active part in the manifold diseases of these organs, and in some of them, especially those evoked by infection, it affords the nearest and most important station for the morbid products." Again: "There is scarcely a notable disease of the pelvic organs in which the pelvic connective tissue does not play a larger or a

¹ Gynäkologische Klinik, Strassburg, 1885.

smaller rôle; in many cases its participation gives the standard for the prognosis and for the therapeutical indications in acute and chronic diseases of these organs, so that it cannot be overlooked or underestimated without danger. In this sense we may say that the pelvic connective tissue controls gynecological pathology." The anatomical studies of Freund, with those of Ziegenspeck and Schlesinger, prove in the most exact, scientific manner the absolute existence of non puerperal parametritis. The researches of Ziegenspeck were especially made to elucidate the subject of *parametritis posterior* from the standpoint of pathological anatomy. They tend to confirm in every way the correctness of the doctrines of Schultze. According to these, this form of parametritis is not usually of puerperal origin. Its cause may be purely mechanical, as when the accumulation and passage of voluminous *feces* in constipation affect injuriously the folds of Douglas. Moreover, the blood of menstruation, as well as the lochia, may be infected, and by ascent lead to pathological processes in the uterus and adjacent structures. These injurious effects are greater during menstruation than during the puerperal condition.

Of the relation of *parametritis posterior* to pathological anteflexion it is out of my province to speak. There are two forms of acute parametritis, which must be discriminated from each other. They owe their origin to two different kinds of infectious material. These matters are, on the one hand, putrefactive bacteria, and on the other specific septic bacteria. The processes evoked by the first may be designated *traumatic*; those which owe their origin to the second, septic parametritis. The first form owes its origin to a trauma of the pelvic organs, which may penetrate into the connective tissue, and to an infection of the wound with putrefactive organic matters. Such wounds are produced even during the course of a physiological labor of a greater or less degree, while in cases of difficult labor demanding operative intervention the genital tract is subjected often to injuries of a severer character. In the unimpregnated condition, operations on the cervix, vagina, and perineum may present favorable conditions for the occurrence of infection with consequent parametritis. Before the time of antiseptics the use of sponge tents was

frequently followed by a *parametritis*, as I have had frequent opportunity of observing. In cases in which septic peritonitis followed the employment of tents the patients usually died, but not so in parametritis. The second form of acute parametritis is the *septic parametritis*. Thanks to the general employment of antiseptic measures in gynecological operations, few of these cases are brought under the notice of the modern gynecologist. As now observed, they are generally of puerperal origin.

The statement is often made that parametritis almost invariably tends to suppuration and that an abscess is the usual termination. To show how far from the truth such statements are, let me quote from one of the highest authorities in pathological anatomy, E. Ziegler. After speaking of a form of parametritis which bears the character of a phlegmonous inflammation and leads to the formation of abscesses, he goes on to remark that "more frequently an absorption of the exudation occurs, especially in puerperal and traumatic forms, and afterward the tissue is more or less hardened in case the process has lasted a long time." It will be noticed that this high authority distinguishes between puerperal and traumatic forms of parametritis. It is of especial importance to study the exudation remaining after an attack of parametritis, as well as the abscesses resulting from this cause. The exudation may be situate anywhere in the pelvis where the connective tissue is found, but certain parts are especially prone to be affected.

Taking precedence of all other structures in this regard, as *à priori* considerations would naturally lead us to infer would be the case, come the broad ligaments. It may occur here in several forms. The *ligamentum latum* may be filled by an inflammatory swelling which extends from the side of the uterus to the edge of the pelvis. On the other hand, the exudation may only occupy the base of the broad ligament and leave the upper part free; it may hug the edge of the uterus closely, or lie adjacent to the pelvic side, and even extend upward to the iliac fossa. Spiegelberg called attention to the pathological importance of the tissue, two centimetres in breadth, surrounding the lower section of the uterus and the fornix vaginae, which is especially rich in blood vessels

and lymphatics, and which he proposed to call parametranous tissue. The inflammation of this part he called parametranous inflammation. I have observed this form of parametritis after attempts at forcible dilatation of the cervical canal.

Inflammation of the cervix, as all have seen, readily extends to the folds of Douglas, as Shultze and Emmet long ago taught us. Fritsch correctly observes: "This is very probable; the core of the folds of Douglas is uterine tissue. If the mucous membrane becomes inflamed, the uterine parenchyma beneath proliferates, and the inflammation is extended to the folds of Douglas." The connective tissue situate beneath bladder and cervix is attacked with comparative frequency. The so-called parametritis anterior is well worth our consideration. A case of this I have recently had an opportunity of studying. The exudation extends here to the connective tissue on the anterior abdominal wall. The tumor is felt close underneath the abdominal covering, with the upper edge more or less sharp, and below reaching down into the pelvis. The termination of parametritis in the formation of an abscess is a subject of paramount importance, as these abscesses break externally at a variety of places. I had an opportunity of observing a very interesting case of parametric abscess about a year ago. In this case I performed the operation of laparo-myomotomy, removing the uterine body, which was the seat of several myomata, and the appendages. I had the valuable aid of Dr. A. P. Dudley. The stump was ligated, covered with peritoneum, and sutured; the edges of the broad ligaments brought together by catgut sutures in the way practised by Drs. Goffe and Dudley. In the second week after the operation a *parametric abscess* developed in the left broad ligament, and, extending up to the anterior abdominal wall, opened into the lower angle of the wound. The tubes and ovaries being here out of the question and the abscess extraperitoneal, a good opportunity was offered for the study of traumatic parametritis. The patient, I need scarcely say, made a good recovery.

On account of its paramount importance, reference must be made to that form of inflammation of the connective tissue a knowledge of which we owe to the clinical and anatomical studies of Freund, who terms it *parametritis chronica atrophicans*.

In the etiology the important factors are excessive irritation of the genitalia, as well as such debilitating influences as depreciate and impoverish the blood. The process starts from the base of the broad ligaments and extends into the neighboring connective tissue; behind, it involves the utero-sacral ligaments; and before, it goes over in a lateral direction to the bladder. It gradually penetrates deeper into the broad ligaments, invades the connective tissue around the vagina, and finally attacks the entire connective-tissue framework of the pelvis. Pathologically the process is a *cicatricial atrophy*, a cirrhosis of the connective tissue; periphlebitic processes are observed in the beginning of the disease. The connective tissue becomes ultimately hard and retracted, the *ligamenta lata* are shortened and become firmer, the *ligamenta rotunda* thin, and finally the uterus and ovaries, with vagina and vulva, undergo an atrophy comparable to senile involution. The symptoms are largely those of hysteria.

HEMIPLEGIA FOLLOWING ABORTION.¹

BY

GEORGE P. FENWICK, M.D.,
Washington, D. C.

I was called July 7th, 1889, to see Mrs. M., whom I found suffering great abdominal pain and uterine hemorrhage, and was informed by the nurse that she had aborted during the night.

On making a vaginal examination I found that the fetus had passed, but that a portion of the placenta had been retained and was firmly attached to the fundus of the uterus. After several unsuccessful attempts at extraction, a tampon was inserted and allowed to remain ten hours, and at the expiration of this time, on removing the tampon, the retained portion was easily extracted.

¹ Read before the Washington Obstetrical and Gynecological Society March 21st, 1890.

On my next visit the nurse stated that the patient had lost the use of the entire left side. After a little examination I was surprised to find that I had a case of complete hemiplegia. The mouth had been drawn slightly to the right side. Sensation not impaired. There had been very slight discharge since the extraction of the placenta. There was no pain. The temperature was only 99° and pulse 70. No febrile symptoms. She was ordered to be kept very quiet and to be given fifteen grains of the bromide and five grains of the iodide of potassium in water every three hours; light diet of milk, tea, and toast was enjoined. She could answer questions very slowly, and appeared to require a great effort to articulate. She seemed conscious of everything said to her. She did not suffer from headache. Third day: The temperature was 100° , pulse 85. She seemed more comfortable, although her condition was about the same. There was no headache. The discharges from vagina were natural; no pain over the region of the uterus, and she did not appear to suffer any from the effects of the abortion. The potassium treatment continued. Carbolic acid injections used twice daily since the extraction of the placenta. Fifth day: Temperature 99° , pulse 80. The drawing of the mouth to the side was less marked. All treatment continued. Seventh day: She was slightly better, the temperature and pulse normal. She had recovered the partial use of the left arm. The leg was about the same. The bowels were kept open by glycerin suppositories. The treatment continued, except that the potassium was given every four hours instead of three. Fifteenth day: She recovered the use of the leg, but said the pain was very severe on the slightest movement. Twentieth day: She was able to leave her bed and walk around the room without assistance. After this I placed her on an iron tonic with good, nutritious diet, and in five weeks from the time she was first attacked she returned to her home in Virginia, apparently well.

What was the cause of the hemiplegia in this woman? Was it merely incidental to the abortion, or was it caused by it? We know that hemiplegia sometimes occurs in the pregnant woman, and it has been observed before and after parturition, but I have failed to find a single case mentioned in

the text books or in the Army Medical Library where it occurred immediately after abortion. Was it caused by a lesion, an embolus in the brain near the fissure of Sylvius, or was it from a pressure on the nerve filaments from a slight hemorrhage? From the symptoms and history of the patient I am of the opinion that it was merely incidental to the abortion, and that hemiplegia was produced from a small embolus in the brain near the "motor speech track" in the fissure of Sylvius. You will observe that this patient had considerable difficulty in articulation, which is considered by Drs. Ranney, Mitchell, Spitzka, and many others to be a diagnostic symptom of lesion in the pons, provided the presence of aphasia of cerebral origin can be excluded by the history of the case.

There is nothing in the history of this case to force any one to the belief that there were any original cerebral troubles before this woman aborted, as her mother and sister informed me that she always enjoyed good health and had very rarely complained of headache. The rapid recovery would partially confirm my opinion that it was a small embolus and was soon absorbed.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF NEW YORK.

Stated Meeting, January 20th, 1891.

W. GILL WYLIE, M.D., *President pro tem., in the Chair.*

THE pathologist, DR. C. T. ADAMS, made the following report on the specimen presented by Dr. Wylie at the last meeting:

The specimen consists of the right tube and ovary. The tube is of about the size and shape of a Bartlett pear, covered with recent adhesions, and has a small opening on its anterior surface which leads into a cavity which occupies the outer two-thirds of the tube. The walls of this cavity, which are extremely thin near the opening, gradually thicken to about half an inch near its contracted uterine end. Here the cavity is shut off from the rest of the tube by a septum a half-inch thick. The cavity is lined by a smooth membrane, and near its contracted end is a membranous projection which looks

like a rudimentary umbilical cord. In the tube on the uterine side of the half-inch septum is a small cavity holding about a teaspoonful of pus. The tube beyond this appears entirely occluded. The ovary on section exhibits a cyst with a small external opening. The cyst appears to be a ruptured follicle. Sections examined microscopically show the thickened wall of the tubal cavity to be placenta at about the third month. The pus contains a few staphylo- and streptococci. The fetus appears to be about the second month.

DR. WYLIE, after repeating a part of the history of this case as narrated at the last meeting, said that after removal of the extra-uterine pregnancy the patient continued to have the same temperature, although without local symptoms. There was no tympanites, no vomiting, no symptoms apparently due to the operation. Dr. Janeway saw her, and expressed the opinion that it was a case of acute miliary tuberculosis. Death took place the third week after the operation.

DR. G. M. EDEBOHLS asked whether it was not possible that the collection of matter in the tube was due to tubercular salpingitis. Only yesterday he was able to make a diagnosis of tubercular salpingitis in a patient aged 26, who gave a history of acquired syphilis. She had a syphilitic cicatricial stenosis of the rectum an inch and a half from the margin of the anus, reducing the calibre to about the size of a lead pencil. In addition there was an enlargement on both sides of the uterus, the one on the right extending around and back of the organ. Ascertaining that this mass was fluctuating, he was enabled to puncture it with the exploring needle and withdraw about a teaspoonful of pus. As the needle was withdrawn from between the tissues of the pus sac and abdominal walls, considerable serum also entered the syringe, which he had examined for tubercle bacilli. Tuberculosis was suspected from the discovery of irregular nodules interior to the abdominal walls, although cough was not present and no tubercular changes could be found elsewhere. The pathologist found tubercle bacilli in the fluid withdrawn, which rendered the diagnosis of tubercular salpingitis beyond doubt.

LARGE FIBROID OF THE UTERUS AND CANCER OF THE CECUM.

DR. H. T. HANKS presented the specimens, whose histories were contained in the paper which he read later. He also presented a hard-rubber tube with a bulb on the end for introduction to and through the strictured portion of the gut in cases of obstruction. Through it a stream of water could be injected by means of the Davidson syringe or other instrument.

DR. W. GILL WYLIE, in commenting upon Dr. Hanks'

specimen, said it was extremely rare to find a tumor in the pelvis so large as to cause intestinal obstruction by pressure. Often the movements were interfered with scarcely at all, notwithstanding the fact that the tumor might be hard and have reached a large size. Therefore, when obstruction did occur, it was well to look for some other cause than the presence of a tumor, unless this were malignant. It was not uncommon for patients with malignant disease involving the intestine to refuse to go to a hospital, believing they were only troubled with constipation, until the obstruction had become complete. He had had a case almost identical with that of Dr. Hanks.

DOUBLE MULTICULAR DERMOID CYST OF THE OVARIES.

DR. FLORIAN KRUG presented the specimens, which were removed on Saturday from a patient aged 36, the mother of two children, who had been cognizant of the tumors in the abdomen for three years. The physical signs were those of fibroid of the uterus, which diagnosis had been made by the physicians who saw the patient. Dr. Krug said he would not have suspected that it might be something else than a fibroid, had he not recently removed a cystic sarcoma which also had presented the symptoms of a fibroid tumor of the uterus.

There had been previous attacks of peritonitis, and he met with some difficulty in separating the adhesions. The larger of the two tumors was about the size of the two fists, and was multilocular, containing two or more distinct compartments. They contained hair, caseous-looking matter, etc.

DR. H. J. BOLDT inquired whether there had been hemorrhages, or what had led to the operation.

DR. KRUG replied that there had been frequent severe hemorrhages, and it was necessary to wait two weeks and try to build up the general health before operating. The uterus was not enlarged, and he could not say what was the cause of the hemorrhages.

DR. W. R. PRYOR said he had never before seen a true multilocular dermoid cyst, and he thought they must be very rare. Doran, he said, had laid down the law that no true ovarian tumor could be other than multilocular, the only exception to this rule being dermoids.

DR. A. P. DUDLEY said he had seen specimens of multilocular dermoid cysts, one in particular removed by Dr. Green twelve or fourteen years ago.

DR. J. R. GOFFE said he removed a double dermoid cyst of the ovaries about two years ago, and he was strongly of the impression that the larger of the two was multilocular; that

in one compartment he found hair, in the other bones and teeth.

A NEW STEM PESSARY.

DR. HANKS presented a stem pessary made of hard rubber, in three sizes, ranging from one and a half to two and a half inches. They are about one-quarter of an inch in diameter. The cap, or head, is about two-thirds of an inch in diameter. Opportunity for perfect drainage is provided for, since the stem is split for one and one-third inches. The cap is open sufficient to allow a possible impregnation to occur while the stem is *in situ*. The stem is retained in position by a silver wire passing through it one-half inch from cap and then passing through each lip one-third of an inch from the os externum. The wire is twisted over the cap in small shallow grooves, and the ends of the twisted wire are turned into the opening in the cap. The instrument gives the most perfect drainage possible. Of course when *in situ* it prevents stenosis of internal os and antelexion. I have had patients wear these stems for three and four months



without any inconvenience whatever and with great comfort. Of course where no stem ought to be used, this one should not be used.

DR. PRYOR thought much might be said with regard to the instrument presented and of the desirability of using pessaries at all. The uterus, as the gynecologist usually found it, was not a well-developed organ; it was in rather a primitive state. If one introduced a stem pessary, the cervical canal would dilate and permit, according to his observation, of as free drainage with a solid stem as with one which was grooved. Besides, if it were grooved or had a hole through its centre, clots would enter and the instrument would be likely to become foul and obstructed.

DR. WYLIE had one fault to find with the stem presented by Dr. Hanks: if the uterus were to contract, the two longitudinal portions would be likely to be pressed together and close the passage.

DR. HANKS said this was possible where the stem was a long one, but not with the short one. He had used it a year and a half and had observed no such difficulty.

DR. PRYOR remarked further that a tampon was not necessary to retain the unperforated stem in place. Atmospheric

pressure retained it as it did a set of artificial teeth. It might slip down a little to permit of the escape of blood, but would slip back again.

DR. BOLDT differed with Dr. Pryor on this point. He had seen the stem come out time and again.

DR. PRYOR thought the last speaker must have used a short stem which did not pass beyond the os internum, and that the uterus was retroverted. It did not occur in simple anteversion.

DR. WYLIE said that, according to his experience, it was better to have a small bulb on the upper end of the stem and a groove large enough to drain thoroughly. Uterine contraction was likely to force them out, so that ordinarily they were found, on the third or fourth day, out, or partly out, below the os internum. He paid more attention to complete drainage the first ten days or a week than he did to straightening the uterus or other purpose. The idea was to bring about a change in the lining membrane and stimulate the development of the uterus.

DR. HANKS agreed with Dr. Wylie that when the uterus contracted on the stem it was likely to expel it, unless there was a decided anteversion.

DR. PRYOR thought that where there had been sufficient dilatation of the os, uterine contraction did not take place and force out the stem.

INSTRUMENT FOR USE AS FORCEPS, SWAB, AND IN IRRIGATION OF THE UTERUS.

DR. G. E. ABBOTT presented an instrument which had nearly the form of Dr. Emmet's forceps, but one blade of which was hollow for the passage of water, and the other grooved at its extremity to allow of the outward flow. A pledget of cotton or a sponge might be carried between the jaws as a swab, or it might be employed as forceps for the removal of shreds of membrane obstructing the flow.

DR. RALPH WALDO thought that if a swab were used during the flow of water there would be danger of preventing the return flow.

DR. HORACE TRACY HANKS read a paper on

THE LOCATING OF INTESTINAL OBSTRUCTION BEFORE, AND THE TREATMENT OF INTESTINAL DISTENTION DURING, OPERATION.¹

DR. BACHE McE. EMMET said he had had the pleasure of seeing Dr. Hanks operate in the case reported in the paper, and it had impressed upon his mind the correctness of the course therein advocated when the tumor could not be located

¹ See original article, page 435.

before opening the abdomen. He thought that no one would now hesitate to perforate the distended bowel and allow of the free escape of gas in order that he might find and remove the obstruction. The operation would thus be shortened and the chances of success be not imperilled by the greater shock attending prolonged manipulation.

DR. PRYOR thought time would hardly permit of taking up all the points made in the paper. Most of them, he believed, had been generally accepted. We now knew much more about the symptomatology and treatment of obstructional bands, volvulus, or intussusception than formerly. The kind of obstruction which interested the laparatomist most was that form which came on about the second or fifth day after an operation. Dr. Pryor thought that while there was truly an obstruction, yet it was due to paralysis from septic peritonitis. This opinion was based on observations made at autopsy, especially in fatal cases of puerperal fever seen at Bellevue. While there had been symptoms of obstruction, yet at autopsy no constricting band, volvulus, or intussusception could be found, but simply evidences of septic peritonitis which must have destroyed the peristaltic action of the bowel. He had seen obstruction after laparotomy only twice, and in both there was peritonitis, enormous distention, and volvulus of the small intestine. The volvulus was explained in this way: A plastic effusion having poured out, uniting two folds of intestine, distention began; one portion of the gut entered the other, and the greater the distention the greater the amount of intussusception. This could be proven by experiments on the dissecting table. He believed the fatal peritonitis began before volvulus developed.

DR. DUDLEY thought Dr. Hanks' case was an extremely interesting one, and one complicated almost beyond possibility of relief. There was a condition which he had never seen—a pure fibroid tumor of the uterus and cancer of the intestine in the same patient. If it could possibly be prevented, he thought the intestines should never be allowed to protrude during an operation. Their escape seemed to add to the shock and make the operation much more dangerous.

Of the non-operative forms of obstruction, or those arising where no operation had been performed, he believed that in women the most usual form arose from rupture of the uterine appendages setting up a local peritonitis which imprisoned some portion of the small intestine. Regarding intestinal incision, he agreed with Dr. Hanks and Dr. Emmet that it was far preferable to taking out the intestine where there was great distention, which prevented discovery of the seat of obstruction. He thought an incision was less dangerous than several punctures, for one would know then where the

gut had been wounded, while he might not when it had been punctured in several places.

To prevent obstruction by adhesive bands after operations, the best method was to keep up the vermicular action of the intestine after the operation. He had had no case of obstruction where he had cleansed the bowel before the operation and kept it free subsequently. Where obstruction followed rupture of the tubes, etc., indicated by the history, there was great distention, acute peritonitis, and pressure paralysis, described by Dr. Pryor, rather than constricting bands.

DR. PRYOR wished to emphasize the point that where obstruction existed after operations it was due to peritonitis, even though volvulus or adhesive bands were present. Obstructions, as commonly understood, were, he thought, very rare after operations.

DR. WYLIE said this subject had been very interesting to him for ten years, and particularly so for six or seven years. His attention had been drawn to one phase of it partly by his own observation, partly by that of his brother, who then began assisting him in his laparatomies. While they had not many deaths after laparotomy, yet in a few cases the symptoms were such as to make them think the trouble could not have been septic peritonitis. In these cases, and some related by others, there was so little rise of temperature before great distention had developed that he began to suspect the trouble was not peritonitis, but obstruction. He did not know at that time that any one had revived the method in these cases, formerly employed in puerperal fever, of using saline cathartics. After beginning their use in laparotomy cases he learned that Mr. Tait was also employing them, but with the idea that they carried away the septic element. The speaker soon observed that the death rate among those patients in whom vomiting set in after the operation, became greatly diminished after he began the use of saline cathartics. This one change of method caused a great improvement in his record. He did not take the ground which Mr. Tait did, that in moving the bowels he got rid of the poison which was causing the peritonitis; it was his opinion that the movements prevented obstruction and in that way saved life. Just what influence it might have upon the poison itself he was unable to say. Subsequently this practice became pretty general, and he was satisfied that hundreds of patients had been saved who, under the let-alone method, would have developed vomiting and symptoms of obstruction leading to death. At present, if a patient on whom laparotomy had been performed should begin to have distention, rise of temperature, and show the least evidence of obstruction, he would at once cause the bowels to move. It was a general

rule with him always to obtain a movement by the third day. If a movement did not take place by that time, and there were signs of peritonitis and distention, death was very likely to result. He had not the slightest doubt that a distensive peritonitis would paralyze the intestines and cause obstruction in the way spoken of by Dr. Pryor, yet he was satisfied that it was the obstruction complicating the peritonitis which caused death.

An illustrative case had once come into his hands in an incidental way. Happening once to be at Dr. Otis' office, he was told of a case which the doctor would like him to see in Brooklyn, in which the possibility of an acute attack of peritonitis developing on a former attack was suspected. Dr. Wylie saw the patient, and was given a history of obstruction of four days' duration. The physician who had been attending the man was a homeopath, therefore Dr. Wylie consented to the trial of measures for moving the bowels twenty-four hours, with the understanding that if not successful he would then proceed to open the abdomen. The distention was not great, the pulse was good, the temperature little above normal, but he still insisted that there was intestinal obstruction, and opened the belly. He took out all the intestines, found the constricting band, cut it, and the patient made a good recovery. He had since operated on one or two similar cases. The great difficulty was that they did not reach the surgeon soon enough; they were treated for constipation until great distention had taken place and an operation was almost hopeless.

He would certainly advocate measures to prevent obstruction, but when it once developed he would operate early. As our knowledge advanced, both with regard to diagnosis and the technique of the operation, he was convinced that many cases would be saved which in the past would have been lost.

DR. HANKS asked Dr. Wylie what method he would resort to in a case of enormous distention from gas and fluids.

DR. WYLIE said that if he had such a case he would endeavor, before opening the belly, to locate the seat of obstruction. If he were uncertain of it, he would make a small opening into the belly, introduce two or three fingers, and explore. He said it was surprising how much information could be obtained in that way. If he still failed to find the obstruction, he would enlarge the opening and introduce his hands, still keeping the intestines in if it were possible. If he succeeded in finding the obstructing band, he would break it up with the finger, if possible, or, if not possible, would make a counter-opening; that is, instead of relying on the median incision, in two cases he had made a second opening

over the seat of the obstruction, in one breaking up adhesions caused by general peritonitis, and in the other separating adhesions which had formed at the cecum, then washing out the pus and lymph. In breaking up adhesions he relied principally upon his finger nails. In the last-named case he inserted a double drain in the median line and at the lower wound. There had been perforation, general peritonitis, and obstruction, yet the man recovered. Where death had resulted it had usually been due to a gangrenous condition taking place at or near the obstruction. He had saved four out of five cases in which there was perforation.

If he could not locate the obstruction by introducing the hand, and the distention, although great, were not excessive, he would take the intestines out. If the distention were excessive, making it evident that if the intestines were once taken out they could not be gotten back without emptying their contents, he would pull a portion out, not necessarily in the median line, secure it on the outside, then open and empty the intestine of gases and fecal matter; then go further with the operation, if he thought advisable. If the patient's condition were very bad he would do nothing more, but rest contented with having made a temporary opening, and trust another operation might be possible afterward. He had done that once successfully.

DR. GOFFE expressed himself as a strong believer in keeping the bowel open by cathartics as a preventive measure. Whenever, in doing a laparotomy, he had reason to fear, on account of the extensive manipulations, etc., the subsequent development of peritonitis and obstruction, he caused the bowels to move almost immediately. He gave an illustrative case operated upon four weeks ago.

With regard to obstruction, he believed with Dr. Pryor that in most cases it was due to paralysis of the bowel. He thought that in keeping the bowels active one did get rid of septic poisoning as well as prevent the spread of peritonitis.

DR. WYLIE explained that it was not his intention to say one did not get rid of septic poisoning by moving the bowels. He simply claimed that the good results of moving the bowels soon after laparotomy came often from preventing intestinal obstruction; and in preventing obstruction one prevented peritonitis. If inflammation developed, owing to the better condition in which the system was placed by the saline cathartic, it was more likely to remain local.

DR. HANKS said, in closing the discussion, that in a few cases on which he had operated, and in others which he had seen at autopsy, there was, it was true, evidence of septic peritonitis, yet there were also a large number of adhesions; one portion of the small intestine might be attached to the

colon, or to the abdominal walls, and so on, so that there might not only be paralysis of the bowel, spoken of by Dr. Pryor, but also actual obstruction. He believed firmly in the principle, several times referred to during the discussion, to move the bowel as soon as the first danger signal had been thrown out.

Stated Meeting, February 3d, 1891.

ROBERT A. MURRAY, M.D., *Vice-President, in the Chair.*

DR. G. M. EDEBOHLS said that the patient whom he was about to present was a woman of 39 years, upon whom he had operated February 28th, 1890, for double pyo-salpinx and ovarian abscess. At the time of the operation she was in a most cachectic condition, being in the active stage of tertiary syphilis. She made a good recovery from the operation, and left the hospital about six weeks later, supplied with a well-fitting abdominal supporter. After leaving the hospital she immediately stopped wearing this supporter, and a hernia gradually developed. When again seen by the speaker, about ten months after the operation, there was a separation of the recti muscles in the region of the wound, four inches long and two inches wide. The details of the operation which he had performed for the cure of this hernia would be reported at some future time. The peritoneal cavity was not opened in this operation.

A NEW SELF-RETAINING VAGINAL SPECULUM.

DR. EDEBOHLS also presented a self-retaining vaginal speculum devised for operations in the dorsal position. In this country it is not very usual to perform trachelorrhaphy and colporrhaphy, and similar operations, with the patient in the dorsal position, and up to about two and a half years ago he had always operated with the patient in the Sims position. At that time he tried the dorsal position, and became convinced that it was far superior to the other. After this he endeavored to do away with the necessity of having an assistant to hold the speculum, and his efforts had resulted in the production of the speculum which he had the honor to show this evening.

The instrument consisted of a blade like that of the ordinary Sims' speculum, only placed at an angle of forty-five degrees or more to the handle. The portion just outside of the vulva widens out into two flanges, which serve to keep the labia apart without the use of separate lateral retractors. The handle bends downward and backward, and terminates in

a hook upon which is hung a pail, the weight of which serves to retract the perineum. The handle is hollow for the purpose of conveying away the irrigating fluid. He had given up the use of sponges, preferring instead to keep the parts freed from blood by constant irrigation. The nozzle of the irrigator is held above the field of operation, and the fluids pass out through the hollow handle into the pail, which overflows into a large basin.

Dr. Edebohlis said that this instrument was not entirely original with him. A number of gentlemen, among them Drs. Cushing, of Boston, G. D. Jones, of Cincinnati, Nitot, of Paris, and others, had elaborated this idea, each in his own way.¹

A SIMPLE AND SAFE FEMALE CATHETER.

DR. MALCOLM McLEAN said that it had been his lot to see much trouble from catheters in the hands both of nurses and physicians, and this was his apology for directing the attention of the Society to so simple an instrument. He had tried it in a sufficient number of cases to satisfy himself that it was the best he had ever used. Its recommendations are simplicity, cheapness, readiness, and perfect cleanliness. It consists essentially of a glass tube, two and a half inches long, with the ordinary urethral curve, open at the vesical end, and having a simple rubber drainage tube attached to its distal extremity. Some antiseptic fluid is drawn up into the tube, and may be kept in it for any length of time by slipping the other end of the rubber tube over the vesical end of the catheter. The catheter is thus kept aseptic and ready for use by keeping it filled in this way with a bichloride solution or a five-per-cent solution of carbolic acid. The instrument is of such a length as to hardly enter the bladder. It was the teaching in more than one school in this city that if the catheter failed to evacuate the urine when introduced to the ordinary depth, it should be pushed still further into the bladder. The position of the bladder is such that it will empty itself from the remotest corner, if the opening into it from the urethra is properly dilated with an instrument, and this is all that should be allowable.

A NEW FORM OF DRAINAGE TUBE FOR PELVIC ABSCESS.

DR. A. H. BUCKMASTER, in presenting this new instrument, said that the difficulties arising from the use of the ordinary form of drainage are three in number: (1) the tube is pushed in, thereby pushing the orifice of the tube away from the opening and preventing thorough drainage; (2) the tube is

¹A full description and cut of the speculum can be found in the *Medical Record* for March 7th, 1891.

pushed completely out of the cavity; or (3) the tissues in contracting squeeze the tube and close its lumen. In order to overcome these difficulties, the tube must be of an unyielding material; it must be flanged on its inner extremity to prevent its falling out, and it must be flanged on the outside or sewed into the wound to prevent its being pushed in. The device presented consists of a glass tube flanged at the side to rest in the abscess cavity. The tube is long enough to project about half an inch from the wound for drainage. Over this end fits a collar of rubber, which is fastened in place by strands of silver wire which pass through perforations in the abscess end of the tube, and then through perforations in the flat disc, and are held in position by perforated shot.

REMARKS ON PARAMETRITIS, ESPECIALLY WITH REFERENCE TO ITS PATHOLOGICAL SIGNIFICANCE.¹

Paper by DR. GEORGE T. HARRISON.

DR. P. F. CHAMBERS said that in the last few years our attention had been so much directed to ovarian and tubal troubles that we had ignored cellulitis to a great extent. He was not one of those, however, who believed in cellulitis as much as some other gynecologists. He thought there were many cases of so-called ovarian and tubal troubles, in which these organs were removed, and which were pure cases of cellulitis. He had seen cases which had been so diagnosticated by others, yet he had successfully treated them as cellulitis. He, for one, would be glad to see the pendulum swing back again, so that cases of cellulitis would no longer be called tubal disease.

DR. J. R. GOFFE did not think we should allow this paper to pass unchallenged. When Dr. Harrison quoted an author as saying that inflammation of the cellular tissue in the pelvis dominates the pathology of pelvic troubles, he wished to take issue with him. There is a rapidly growing sentiment that the dominating influence of peri-uterine troubles is in the peritoneum, associated, of course, with disease of the uterine appendages. Dr. Harrison had quoted foreign authorities freely, yet had offered nothing new from his own experience to prove that there is such a thing as cellulitis. We were all willing to admit that cellulitis may occur in connection with pelvic peritonitis, but he had not seen a single non-puerperal case in which cellular inflammation was of any practical importance. When he left the Woman's Hospital of New York, he had a strong belief in pelvic cellulitis; but afterwards, when compelled to unlearn this, he thought he had

¹ See original article, page 460.

made a distinct advance in his knowledge of pelvic inflammation. One gains the clearest and best insight into these inflammatory troubles in the female pelvis by comparing the pathological changes occurring in the serous membrane of the pelvis with those of the serous membrane lining the pleural cavity. There may be a serous inflammation in the pleura, with simply a pouring out of serum, and subsequent absorption of the serous exudate, the patient recovering without serious consequences. A similar series of changes may occur in the pelvic serous membrane. If the pelvic inflammation passes one step further, we have not only serum but a plastic exudate; and if this process stops sufficiently early, this exudate may be dissolved by the serous effusion and be absorbed. If, however, the inflammatory process continue, the exudation may become organized and give rise to strong pelvic adhesions. It was well known that just such adhesions resulted from a similar process in the pleura. In an asthenic patient the inflammation of the pleura may convert that membrane into a pus-secreting surface, and the suppuration may be kept up for weeks or months.

He believed that in the same way the pelvic peritoneum might degenerate into a pus-secreting surface, resulting in the development of a pelvic abscess. He did not believe that pelvic abscesses in non-puerperal cases were in the cellular tissue, but that they were inside of the peritoneal cavity, the pus being shut in by adhesions above between coils of intestine, or by adhesion of the upper border of the broad ligament to the intestines.

DR. HARRISON remarked that one case to which he had referred in his paper was a beautiful illustration of inflammation terminating in suppuration in the pelvic tissue, and when the suppuration could not be referred to the tubes and ovaries, as these were absent.

DR. GOFFE, continuing, said that he did not believe the tubes and ovaries were always the cause of the inflammation. The case referred to by Dr. Harrison was one in which he had performed supravaginal hysterectomy for fibroid tumor, and disposed of the stump according to the method described and advocated by him in a paper published over a year ago. Suppuration had occurred under the flap. He, however, had failed to dilate the cervix and allow the pus to escape. It had therefore, fortunately for him, found an exit between the layers of the broad ligament, and gradually worked its way along till it appeared in the abdominal wound. At least, it is fair to suppose this to be the case, in lieu of the more exact knowledge only obtainable by post-mortem studies.

When we come to perform laparotomy in cases diagnosed as cellular inflammation, we have found that when the

adhesions were broken up and the diseased tubes and ovaries removed, the thickened condition of supposed cellulitis, found by bimanual palpation, has disappeared. This had repeatedly been his experience, and it had convinced him that cellular inflammation did not have the importance formerly attached to it.

Pathologists were formerly misled in regard to pelvic abscesses, because at post-mortems, when they found the upper border of the broad ligament rolled backward and fastened by adventitious membrane, they mistook it for the posterior wall of the broad ligament, and therefore concluded that the pus lay between the layers of the broad ligament in the cellular tissue.

DR. MALCOLM McLEAN was a firm believer in pelvic cellulitis as a factor in pelvic disease, and also in the existence of diseases of the peritoneum and of the appendages of the uterus, and he had operated for these troubles. He had, like the preceding speaker, seen cases of so-called cellulitis where the adhesions were dissipated by the removal of the appendages; but he had also seen the converse of this, and the case was worthy of mention. He had recently been invited to be present at a laparotomy upon a case in which the touch evidently indicated thickening around the uterus, such as we were taught formerly meant pelvic cellulitis. He had been asked by the operator to be present for the particular purpose of seeing that there were really no such thickenings. The surgeon removed the appendages, which were not adherent and appeared not to be diseased. The tubes were not infiltrated with pus, serum, or blood, they were of normal calibre, and the ovaries looked normal; but the adhesions and thickenings in the pelvis still remained. He was unable to explain, upon any theory connected with the ovaries and tubes, the reason for the rapid subsidence of tension and edema of the soft pelvic tissues, leaving behind no evidence of any disease of the peritoneum.

DR. C. T. ADAMS thought wherever cellular tissue existed cellulitis might occur, and pyo-salpinx was often associated with a thickened pelvic cellular tissue. The point of infection is the keynote of the whole subject. If the pus travelled through the tubes, we would have pyo-salpinx, and perhaps peritonitis and ovarian abscess at the same time; if through the mucous membrane and lymphatics, the broad ligament would be infected, and we would have a cellulitis, and perhaps an ovarian abscess complicating this condition.

DR. BUCKMASTER said that three cases had come under his observation where, without preliminary treatment or systematic observation, the ovaries and tubes had been removed. They were not only instances of the reckless manner in which

tubes and ovaries were removed at the present time, but of the occurrence of cellulitis after such an operation. They showed also that the burden of proof rested with the men who claimed the tubal origin of this trouble. In all three cases there was inflammatory action about the utero-sacral ligaments, and in two of these, which were seen in the hospital in Dr. Emmet's service, the patients were far worse after the operation, yet they were practically cured by the treatment usually successful in these cases, without resort to operation.

As a result of personal investigation, independent of any authority, he was prepared to accept Dr. Harrison's statements as absolutely true, and to believe implicitly in Emmet's teachings. He was sure that Schultze had obtained many of his ideas from Emmet, and in fact he had partially acknowledged his indebtedness to this author. Dr. Goffe's comparison would hardly hold, as the conditions in the pleural cavity and in the pelvis were so dissimilar that in drawing an analogy we were liable to be misled. The condition in the pelvis which was under discussion was so perfectly manifest by ordinary clinical observation that he could not understand how there could be but one opinion. The three cases to which he had alluded belonged to a series which he hoped at some future time to present in a tabular form.

DR. EDEBOHLS said that the discussion had brought out two points, viz., the first one hinging upon the existence of parametritis; and the second point upon the pathological significance of that affection. As regards the existence of a parametritis, he did not know of one author of prominence who had disputed it, and opinions differed only as to its relative frequency. Any one who had seen the sections by Freund which were presented at the International Congress in Berlin could not but be convinced that parametritis was visible, and certainly every author of note had described the affection. It exists especially in connection with the puerperal state.

In one case with puerperal sepsis—in which he diagnosed pus in the pelvis, and in which, subsequently, fluctuation developed over the outside of one hip, over the sacro-sciatic foramen—he incised through the entire thickness of the buttock down to the sacro-sciatic foramen, and passed his finger through the lower compartment of this foramen into the parametric tissue, making a counter-puncture through the vagina. A drainage tube was then passed through from the outer side of the hip and out through the vagina. The patient died, and he found on post-mortem examination an acute general septic peritonitis, and also an acute purulent parametritis. Such a case demonstrated beyond doubt the

possibility of the occurrence of such an affection as parametritis.

He was one of those who believed it was comparatively rare, and that, when not of puerperal origin, it occurred as a transient complication of disease of the tubes, ovaries, and perimetrium. The cases which had been treated for several months as parametritis, with hot douches, rest, etc., were due to more serious trouble than a parametritis.

When a case of pelvic exudation presents itself, he always, as a matter of safety, considers it as consisting of two possible affections—a combination of intraperitoneal trouble affecting the tubes and ovaries, and of parametric inflammation. The latter was invariably removed by one week's rest in bed, and then he could outline distinctly the enlarged tubes and ovaries, and in nearly all these cases he had had an opportunity subsequently to satisfy himself of this condition. As an instance of the general way in which these pelvic affections are combined, he cited a case, which he had seen recently, where there was a typical parametritis with a large exudation. After a few days of rest in bed he was able to differentiate a large, sausage-shaped tube about one inch in diameter, and could trace it from the uterus to the outer pelvic wall. The exploring needle withdrew serum from this tube, and the diagnosis was made of hydro-salpinx and parametritis. Two days later he made a puncture on the other side of the pelvis, and found the ovary about twice its normal size, and, puncturing it from the abdominal wall, he withdrew pus. Here, then, was a case of ovarian abscess on one side and hydro-salpinx on the other. He proposed to operate upon this case, and he expected to be able to report that all the exudation in the pelvis had been removed.

Dr. Harrison's cases, in which he removed the tubes and ovaries, and body of the uterus, and which was followed by suppurative inflammation within the pelvis, Dr. Harrison called a suppurative parametritis, but it was very difficult to demonstrate this except by a post-mortem examination. Encapsulated abscess of the pelvic peritoneum and suppurative parametritis would give nearly the same physical signs. He would like to know the differential points.

DR. HARRISON replied that the fact that his patient did not have any fever showed that it was external to the peritoneum.

DR. W. E. BULLARD thought a possible solution of the rarity of cellulitis to-day was to be found in our more careful antiseptic methods of treatment of the genital canal after labor, and in the performance of operations upon the cervix and uterus. Fourteen years ago it was common to see these masses in the left broad ligament, filling all the pelvis. We

called it cellulitis, and this was probably correct, but the septic matter entered through some traumatism of the cervix. Now it is very rare to see well-developed inflammation, thickening, and hardness in the broad ligament. When sponge tents were used, inflammation was very common. He did not see why there should not be a form of inflammation due to the passage of septic material through the cervix and uterus to the peritoneum, as well as by a channel passing directly from the cervix into the cellular tissue.

DR. J. H. FRUITNIGHT said that we undoubtedly saw cases of pelvic cellulitis *per se* restricted to the cellular tissue, and he did not see why the cellular tissue of the pelvis should be less susceptible to inflammatory troubles than cellular tissue elsewhere in the body. We saw diffused suppurative cellulitis in the neck; what difference was there between the cellular tissue of the neck and that of the pelvic cavity, aside from location? Cases of pelvic cellulitis occurring independently of the puerperal state were a reality, but they were not frequently observed.

DR. E. H. GRANDIN said that while, in the earlier years of his practice, everything was cellulitis, the tendency to-day was to make everything tubal or ovarian disease. As an obstetrician he saw cellulitis frequently, but as a gynecologist he rarely met with it. It is an acute condition following upon the puerperal state. Drs. Fruitnight and Bullard had struck the keynote of the whole discussion when they attributed its present infrequency to our improved management of the puerperal state, and for the same reason it might be said that there would be fewer cases of salpingitis if the obstetrician took better care of his cases. He could not conceive of an inflammatory affection, due to tubal disease, disappearing in the course of some weeks as the result of nothing but rest in bed and the use of hot douches. If tubal disease coexisted, then, the cellulitis having disappeared, he would expect to find thickening of the pelvic peritoneum, and within this the diseased tube and ovary.

DR. R. A. MURRAY said that the paper of the evening had considered the question of the existence of cellulitis, and had then shown the author's position regarding this condition and the more common diseases of the pelvis. The discussion had drifted into a consideration of puerperal cellulitis, which was excluded from the paper. All had seen cases of virgins who, as a result of exposure to cold during menstruation, had suffered from symptoms of pelvic inflammation. Were these cases of pure pelvic peritonitis, or were they not infrequently cases of cellulitis? He thought many of them were the latter, for the following reasons: (1) The cases are attended by very acute symptoms, and *all* the organs in the pelvis are

tender, and the pain over the abdominal wall is not nearly so great as when pressure is made over the bladder or rectum, or when the uterus is moved; (2) this condition can be relieved by rest in bed and the ordinary treatment for acute inflammation; (3) there are no fixation points left after treatment, if treatment be begun before the involvement of the peritoneum. In these cases there is no sepsis and no puerperal condition.

As to the significance of cellulitis in the majority of cases coming to us with pelvic trouble, he would say that with almost all cases of pelvic peritonitis there is pelvic cellulitis, and it does not always become purulent; but that when this occurs the collection of pus is often in the cellular tissue. There may be, however, only a serous inflammation, and in such cases the post-mortem shows no evidence of this condition, as the tissue by its contractility and rigidity dissipates the serum. The same thing is observed in cases of death from edema of the glottis. If the exudation be adhesive or sero-fibrinous there may be adhesions, and these are not always in the peritoneal cavity. Dr. Murray was of the opinion that the majority of cases of abscess in the pelvic cavity are due to disease of the tubes and ovaries.

DR. HARRISON, in closing the discussion, said that he had only considered the pathological significance of parametritis, and it was on this account that he had been compelled to quote so freely from German authors, who were acknowledged to be leaders in this department. He was compelled for the same reason to refer to Schultze, because this author had made such a study of parametritis posterior. Dr. Goffe had expressed his own personal views on the pathology, and they were at variance with those of acknowledged authorities who had furnished abundant proof of the existence of parametritis in the puerperal condition. The differential diagnosis between intraperitoneal and extraperitoneal exudation is certainly very difficult, but it is a denial of all the clinical evidence of pathological anatomy to claim that there are no organs in the pelvis except the tubes, ovaries, and occasionally the uterus.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, December 19th, 1890.

The President, W. W. JAGGARD, in the Chair.

EXHIBITION OF SPECIMENS: (A) POLYPOID MYOMA.

DR. C. T. PARKES.—Mr. President: This is a moderate-sized tumor removed from the vagina of a patient about 50 years old, who was sent to me for examination, with the supposition that she had carcinoma of the uterus because of a foul discharge coming from the vagina. Upon examination I found the pelvis blocked with this tumor, which was showing signs of degeneration. Upon examination with the finger I found it smooth and regular of surface, evidently a myoma, and on this surface a commencing slough. I could get no history of the time when this polypus was discharged from the uterus, and no history of any severe bleeding of any kind; but upon anesthetizing her I soon found that it was continuous with a long pedicle attached to the anterior wall of the uterus, and so at one time in its history it was simply a small submucous fibroid. After separation of its pedicle with long curved scissors, it was delivered with considerable difficulty owing to its size, but without much damage to the vagina.

(B) PREGNANT UTERUS WITH FIBROID TUMOR.

This other specimen possesses some interest, in that it is a pregnant fibroid uterus of about four and a half or five months. At the time of the operation the mass filled the abdomen as full as pregnancy at full term. The patient was brought to me from Wisconsin two weeks after the commencement of the illness for which it became necessary to do this operation. She had been two weeks in bed, suffering great and continuous pain, showing a high temperature, considerable peritonitis, and trouble of different kinds, so that some interference was evidently absolutely necessary. The physicians who had charge of the case diagnosed pregnancy before she was brought here, but they could not tell exactly to what period it had reached. The larger mass lay up under the liver, and here the most pain was felt. This smaller tumor was about all we could feel in the pelvis, except by very forcible pressure of the finger where the cervix could be

touched. Examination showed pregnancy, and we deemed it advisable to make an abdominal section to remove the mass. The operation was done, the pedicle being treated by the extraperitoneal method. The patient went home entirely well in four weeks. It was one of the easiest recoveries from a severe operation that I have ever witnessed.

TUBAL PREGNANCY WITH TWO OVA IN THE SAME FALLOPIAN TUBE.

DR. CHRISTIAN FENGER.—The specimens I present to-night are those of tubal pregnancy in the second month. The rupture of the sac occurred toward the end of the second month; it caused considerable hemorrhage into the peritoneal cavity, so much so that the patient was exsanguinated. The rupture took place about 4 o'clock in the morning, and in consultation with Dr. Goldspohn about 9 o'clock we decided upon immediate operation. The woman was almost pulseless and showed all the signs of dangerous hemorrhage. The operation was done at 11 o'clock and this specimen was removed. It was from the left tube, and when the peritoneum was opened a great amount of liquid and large clots of blood were taken out, probably about three to four pounds in all. On digital exploration of the organs of the smaller pelvis, I felt a tumor on the left side of the uterus, and by lifting the broad ligament out of the abdominal wound I got the whole tubal pregnancy, with the fetus hanging out of the ovum with the umbilical cord, which I divided so as to not lose the fetus, because I wanted to examine it carefully afterwards. During this manipulation I found in my hand the oval body which I present here. When the tube and left ovary were ligated the blood was removed from the abdomen, not by irrigation, but by aseptic sponges, after which a glass drain was inserted. Dr. Goldspohn, who has had the care of the patient since, states that there have been no untoward symptoms as yet. The operation was done a week ago, so there is no reason to expect any further trouble.¹

What I mainly want to discuss is this: The specimen shows, in my opinion, two ova, the oval one degenerated, and both located in the same tube. The degenerated or oval one is a cyst one and one-quarter by one inch in diameter, with a wall three to four millimetres thick. One half of the ovum is covered with tubal wall; the other half, as will be seen in the specimen, is naked. It contains a clear, gelatinous fluid surrounded by a transparent membrane covering the inside of the wall. This oval ovum is smooth on one-half of its surface; the smooth half being, in my opinion, the thin wall of the

¹ At the time of publication she is well, after an uninterrupted convalescence.

tube, which is adherent to it and has been broken off. The other half of the ovum has been included in the tube, and has been in connection with the walls of the tube or with coagula. This degenerated ovum is located on the uterine side of the second ovum. The second ovum is ruptured and contains the fetus, attached by the umbilical cord to the inside of the ovum, through the opening of which it protrudes. I divided this umbilical cord in order to save the fetus during extirpation of the tube.

The fetus is three-quarters of an inch long, is enveloped in the sac of the amnion, shows bend of neck, eye and ear, and beginning division of fingers and toes: it is consequently between six and eight weeks old (His). This ruptured ovum is located in the abdominal half of the tube, and shows a smooth surface, to the upper part of which the umbilical cord is attached, and the outer surface of which is all covered with chorionic villi. Over part of the top is a smooth surface with ragged edges in the shape of a cap, which is a broken-off portion of the wall of the Fallopian tube.

I do not think there can be any doubt as to the existence of two ova. This will probably be shown by a microscopic examination of all the parts in detail.

Further, as to the age of these two ova, Dr. Goldspohn says that a year ago he suspected this patient of having had a ruptured tubal pregnancy. Whether the ova or degenerated ovum belongs to that period, a year ago, or is a twin ovum two months old, is, of course, an open question.

I present this as a specimen of ruptured early tubal pregnancy, with two ova in the same tube close to each other, leaving it unsettled as to whether the oval body is an ovum, and whether it is of the same age as the other—that is, six weeks to two months—or whether it is older and originated a year previous when there were symptoms of ruptured early tubal pregnancy.

DR. ADDISON H. FOSTER reported

A CASE OF VELAMENTOUS INSERTION OF THE CORD.

Mrs. S., age 26, was confined October 7th. She had a tedious and painful but otherwise normal labor. There was considerable hemorrhage immediately at and following the delivery, and the child, of normal size, was somewhat blanched. The placenta was easily and promptly expelled. The cord entered the membranes opposite the placenta, and, dividing and spreading, passed to one margin of the placenta, where it divided still more into branches running across its surface. One of the larger veins, about four inches from the margin of the placenta, was ruptured and was probably the

source of the additional hemorrhage. Although this condition is said to be not very rare, this is the only case of the kind I have ever observed.

CASE OF HEMICEPHALUS WITH HYDRAMNION.

Mrs. M., age 40, had a tedious and severe labor fourteen and a half years ago, from which she recovered fully, and went through a very normal labor one and a half years later. Eleven years ago she had twins at eight months that lived a few hours. Distention of the uterus seemed to be the cause of the premature labor. Her recovery was slow from this confinement, she being weak and very nervous. Subinvolution and extensive erosion of the cervix were found, which rapidly improved under local treatment, and with full recovery in her general health and spirits. Several years ago she had a normal though rather rapid labor and a strong, healthy child. Two years later she had a six months' miscarriage, supposed to be from overwork and worry in attending a severe attack of bowel trouble in the babe. Three years ago, with loss of flesh and strength, she grew very nervous and perverted in mind. She had been attending dancing clubs and parties, and under the continual excitement of late hours and suppers she broke down in health. She fell into the care of prescribers for the nerves for several months, with very little ultimate benefit; for at each menstrual molimen she was as much disturbed and melancholy as ever, with no material gain of strength. When she returned to my care, there was found sharp ante flexion with some cervical catarrh. Dilatations, rapid and with slippery-elm tents, and stimulating applications, with alterative and tonic constitutional remedies, much improved her condition both local and general. She was still thin and somewhat perverted in mind, although her diet, exercise, occupation, and sleep were well regulated. After several months, very much against her will, she finally consented to become a mother, if possible, with the assurance that it would improve her in body and mind. In March she became pregnant, and improved in health and spirits from the first. In the last of August, or late in the fifth month, she began to increase in size more rapidly than is usual, so that by the seventh month she was fully as large as ever before at term. She was feeling very well all the while, going out to walk every day. Her only discomfort was weight and pressure, and the last three days before confinement she had a feeling "as if she was going to be sick." She feared twins, but, from roundity of abdomen and fluctuation, she was disabused of that idea, though she was not told our conclusion. October 10th she began to have "slow, pressing pains" (as she termed

them). Because of the great amount of amniotic fluid in the sac, no presenting part could be distinguished. After full dilatation the membranes were punctured as high as possible anteriorly during an interval of pains, when at least two gallons of fluid escaped, deluging the bed, mattress, and floor. The presenting part was anomalous to me, when a few strong pains suddenly expelled a hemicephalous dead fetus of about seven months' development. The shoulders presented, and not the breech as is often the case. The mother made a prompt and good recovery, and is in a better condition of body and mind than she has been for two years.

An excessive amount of amniotic fluid, while supposed to result from various causes—maternal, fetal, or both—is an almost constant factor in cases of monstrosity.

DR. W. W. JAGGARD.—Dr. Foster's cases are both of uncommon interest. The case of hemicephalus is a typical example of cranio-rhachischisis. According to the old view—Morgagni, Förster—cranio-rhachischisis is due to hydrops canalis cerebro-spinalis at an early period of fetal life. Fluid collects in the embryonal cavities of the brain and spinal cord until the sac ruptures outward. The development of the bony covering is thus prevented, and the uncovered basis of the ventricle is exposed to the action of the liquor amnii. Dareste and Perls—the new view—ascribe the malformation to a pressure from without upon the vertex and back of the neck. This pressure, according to Dareste, is present when the amniotic cap of the head-fold of the embryo fits too tightly at a time when the cranial vault and spinal canal is still covered only by skin. Ahlfeld effects a compromise between the old and the new views, while Lebedeff is of the opinion that very early in embryonal life a medullary tube is either defectively formed or the posterior wall is destroyed.

These individuals are not viable. From an obstetrical point of view, the anomaly is of interest from its association with hydramnios, when the defective portions of the brain and spinal cord are not covered by epidermis. According to Fritsch, the excess of liquor amnii is due to the outpouring of cerebro-spinal fluid after rupture of the hydrocephalus or of the hydrorrhachis. According to Lebedeff the secretion comes from the ependyma. Hemicephali commonly present by the head, and seldom cause dystocia except when the shoulders are unusually broad.

The other specimen is the most typical example of insertio velamentosa I have ever seen. The cord is inserted into the chorion at the pole of the ovum, opposite to the placenta. It is of special interest to note that the anomaly did not apparently affect the development of the child nor the character of

the labor. The anomaly is also of interest in connection with Hofmeier's theory of the development of placenta previa, *i.e.*, the development of the chorionic villi in the decidua reflexa.

LAPARATOMY FOR EXTRA-UTERINE PREGNANCY TWO MONTHS
AFTER DEATH OF FETUS AT TERM.

DR. C. T. PARKES.—This specimen is the entire sac and fetus removed from a case of extra-uterine pregnancy two months after the child's death at term. When removed the child was macerated and showed marked evidence of decomposition. The sac was rotten and easily broken, especially at the upper and thinnest portion. A portion of the sac was within the pelvis, and a higher portion, which was very thin, extended upward to the highest point of the mass. The thickness of the sac was remarkable; at some points, especially where it projected into and filled up the entire pelvis, it could very easily be divided into a number of layers. The uterus was carried to the left side and out of the pelvis, where it could be easily felt before the operation.

My intention on commencing the operation was to open the sac only, remove the contents, and sew the edges of the opening to the abdominal incision; but the accidental rupture of the upper, rotten portion rendered the complete removal necessary.

The clinical history of the case, as given by the patient's physician, Dr. George F. Hofstetter, of Lyons, Iowa, is as follows:

Mrs. W. D. A., age 21, married, no children, had her last normal menstruation about June 20th, 1889. In August and September she consulted me for the relief of nausea, vomiting, etc. I informed her that she was probably pregnant—a condition she did not suspect, as she had been married seven years and had never had a child. She had the usual symptoms of pregnancy in order until the latter part of October, when she was seized with severe pain low down in the right side, accompanied with collapse. The next day a rather free hemorrhage occurred. She recovered from this attack of sickness, and from that time until the cessation of gestation nothing unusual occurred except occasional slight hemorrhage and intermittent abdominal pains, probably more severe than expected in a normal pregnancy. The abdomen enlarged, the fetal movements were detected, and the condition was supposed to be one of ordinary pregnancy. In the last part of February, 1890, the patient went through a severe attack of influenza. On March 1st and for several days after unusual pains were felt, supposed to be premonitory of labor. At this time the first external examination was made, revealing

an irregular swelling of the abdomen and calling attention to the probability of an abnormal state. When these pains subsided, the fetus was found to be dead, as evidenced by cessation of motion and failure to hear the fetal heart sounds. From then until the last week in April there was progressive diminution in the size of the abdomen—showing absorption of amniotic fluid—flattening of the breasts, and an apparent general improvement in the patient's general health, as indicated by increase of flesh and strength and better color; she at times rode out, and walked for many blocks without suffering pain or becoming fatigued. In the last week in April a decided change came on. There were severe abdominal pains, neuralgic and cramp-like in character; fever appeared; the pulse became more rapid; there was loss of flesh and color; in short, septic trouble commenced. March 28th or 29th the decidua membrane was passed entire.

The above history is derived mainly from inquiry, some of it from observation, but it is trustworthy. The points of interest derived from physical examination I will now relate as they appeared to me.

The abdomen presented two distinct enlargements: a greater occupying nearly the entire abdominal region, but situated slightly to the right of the median line, most prominent just to the right of the umbilicus, and extending to the height of normal pregnancy at term; a smaller, simply a projection, about the size of the closed hand, lying in the left lumbar regions, freely movable and the seat of frequent pain. These two enlargements were very distinct when first examined, but after the death of the fetus the separation between them was not so plain, owing to the diminution in the size of the smaller, while the larger became more central. The latter was plainly the fetal tumor; the former was at first doubtful, but, in the light of the internal examination and subsequent information, I am convinced that it was the enlarged uterus displaced. The breasts assumed the ordinary symptoms—viz., pigmentation, and enlargement, and the secretion of lacteal fluid. After the death of the fetus these symptoms disappeared to some extent. Digital examination per vaginam only was made, on account of the crowded and occupied state of the pelvis. The os uteri was with great difficulty detected, and was found behind the pubic bones, soft and dilatable. At the time of the passage of the decidua membrane the examining finger readily entered the os, passed upward, forward, and decidedly to the left toward the small projection observed externally. The cervix and body of the uterus were found empty. Subsequent to the passage of the decidua the os was contracted. Directly posterior to the os

uteri, and occupying the cul-de-sac of Douglas, the fetal head could readily be made out, the sutures being very plain. About May 1st, through some change in the position of the fetus, nothing but fluctuations in the cul-de-sac could be felt. A peculiar condition in this case was the almost total obliteration of the vaginal portion of the cervix, causing the pelvic tumor to appear like a normally pregnant uterus, so much so that a consulting physician declared, as late as April 25th, that the child was dead in the uterus. Digital examination per rectum permitted the fetal bones to be felt very plainly, and showed but very little tissue between the rectum and the child.

In summing up the diagnostic points of this case we have :
1. The ordinary signs and symptoms of pregnancy. 2. Hemorrhage at irregular intervals during the entire period of pregnancy. 3. Pain, collapse, and hemorrhage at about the end of the fourth month. 4. Irregular abdominal, cramp-like pains, more severe and continuous than would be expected in a condition of normal pregnancy. 5. Death of fetus at term, followed by diminution in size of abdominal protuberance and of breasts, and by cessation of lacteal secretions. 6. Irregularity of the abdominal enlargement. 7. Passage of decidual membrane. 8. Position of os uteri, forward and behind symphysis, and obliteration of cervix. 9. Very dilatable os. 10. Empty uterine cavity. 11. Pressure of the fetal head in the cul-de-sac of Douglas.

The immediate reasons for operation were principally evidences of general septic infection, chills, sweatings, diarrhea, and high temperature, the latter ranging from 101° to 104° .

Dr. Hofstetter brought the patient under my care, and the operation was done on May 9th, 1890, in the presence of a number of medical gentlemen. An examination confirmed the diagnosis already made by Dr. Hofstetter. The pelvis was almost entirely filled by the mass. The tumor fully filled the abdomen, and the seat of resonance showed that the intestines were pushed well out of the way. Portions of the fetus could be felt and easily recognized. A free abdominal incision was made and the tumor exposed. It was found but slightly adherent to the abdominal walls, and this over a small area. It was of a dirty sphacelated appearance, soft and easily broken down. It was incised, and out of the opening there was discharged an offensive, thick fluid in considerable quantity. The child was seen at once, breech upward. The legs were seized and the child quite easily delivered, but during its delivery the thin upper portion of the sac was torn, allowing the small intestines to protrude into the sac and the fluid contents of the sac to enter the abdominal cavity. It was now found that some of the

fold of small intestines were adherent to the shreds of the upper part of the sac; these were easily separated and without bleeding. It was now thought best to remove the entire sac, if it could be done. Examination showed a perfectly free surface of the sac, both anteriorly and posteriorly, as far down as the brim of the pelvis; but this cavity was found entirely filled by the development of the sac, with the small undeveloped uterine body raised out of the pelvis and lying to the left.

The tumor seemed to be covered on all surfaces with peritoneum. The cecum on the right and the sigmoid flexure on the left were intimately adherent to its walls.

It was determined to enucleate it by a procedure similar to that which is adopted in dealing with a broad-ligament tumor. Accordingly an incision was made through the covering, low down posteriorly; the fingers were introduced and the covering peeled away and secured in sections by forceps. Just at this critical moment the light in the room was made so poor by a storm outside that nothing whatever could be seen in the abdominal cavity, and I was compelled to depend upon the sensation of touch entirely. This misfortune led to a separation of a portion of the sigmoid flexure too close to its wall, so far interfering with its vitality that a small portion of it sloughed away on the sixth day. The right ureter failed also to be recognized, and was included in the grasp of one of the forceps and divided. Neither of these accidents would have happened had the light been even fair; practically there was none in the abdominal cavity. As soon as the coverings were lifted off all around, the sac was easily peeled from and lifted out of the cavity of the pelvis and removed. The bleeding was very slight and in no way added to the patient's danger. The cavity of the peritoneum was thoroughly cleaned, and the cavity occupied by the sac filled with iodoform gauze. The patient was much exhausted at first, but soon rallied, and nothing of note transpired in the progress of the case until the sixth day. The temperature reached 102° once; most of the time it remained below 100° . The patient was cheerful and free from pain. From thirty to thirty-three ounces of urine were secreted daily and passed by the patient's own efforts.

Upon removing the dressings on the sixth day and pulling out some of the gauze packing, fecal matter was found in the wound. Gas had passed from the rectum freely on previous days. The gauze was all removed and the cavity thoroughly irrigated. The progress of the case was favorable in every way, except the fecal fistula, until the eleventh day, when the patient began to show signs of obstruction of the bowels. Persistent and uncontrollable vomiting commenced. There

was neither discharge of gas for feces from the wound nor from the rectum. The patient became rapidly and profoundly exhausted, and died on the twelfth day after the operation. The post-mortem showed an opening, about the size of half a dollar, in the lowest part of the sigmoid flexure. Several folds of intestine were constricted in an opening in the remnant of the sac wall. The kidney on the right side was noticeably atrophied. There was no evidence whatever of peritonitis.

Similar cases have been recorded by Malcolm McLean,¹ New York, operation at twelfth month, three months after death of child at term; sac sewed to incision; recovered. Dr. Kelly² refers to case of Dr. Robb, five months beyond term; unruptured tubal; complete removal; died. Dr. Kelly's own case, five months beyond term; complete removal; recovery. Laparotomy³ for extra-uterine pregnancy, five months after term; child free in abdominal cavity; complete removal; death. Reidinger,⁴ at term; sewed to incision; recovery. Slawjansky,⁵ entire removal of sac; recovery (eighth case in Russia). Carl Braun,⁶ entire removal; living child. Muretow,⁷ sac sewed to incision; apparent slow recovery; subsequent death from other causes. Frommel,⁸ at term; sewed sac to incision; recovery. Braun-Fernald,⁹ two cases; complete removal; one death, one recovery. Olshausen,¹⁰ eight cases, three stitched to the wall; five complete extirpations; all recovered. H. A. Reeves,¹¹ ectopic ovarian gestation; complete removal; recovery. Total, 20—complete removals, 13, 3 deaths; stitched to incision, 7, all recovered.

Prof. Werth¹² states that extra-uterine pregnancy may occur in the Fallopian tube, in the Fallopian tube and broad ligament, in the ovary and broad ligament, or in the ovary alone, and it may go to term in all of these. The sac may be composed of several organs. It is probable that the fetus may develop in the free abdominal cavity, but this has not been satisfactorily demonstrated. There is frequently confusion from the presence of pregnancy in a uterus unicornis.

He gives sixteen cases of advanced pregnancy of tube and broad ligament. Thirteen cases of tubal pregnancy at six and ten months without implication of any other organ. Eight cases of extra-uterine pregnancy about at term with a living child, seven deaths, one recovery; one death from

¹ AMERICAN JOURNAL OF OBSTETRICS, April, 1890, p. 348.

² AMERICAN JOURNAL OF OBSTETRICS, October, 1890, p. 1108.

³ North Amer. Pract., Feb., 1890. ⁴ Wiener Klin. Woch., 1889, No. 47.

⁵ Cent. für Gynäk., 1889, No. 48. ⁶ Cent. für Gynäk., 1889, No. 36.

⁷ Journal für Geburtsh. u. Frauenkr., 1889, No. 6. ⁸ Deutsche Medicin. Woch., 1890, No. 23.

⁹ Archiv für Gynäk., Band 37. ¹⁰ Prager Klin. Woch., 1890, No. 8.

¹¹ London Lancet, October 25th, 1890. ¹² Kiel, 1887.

shock, five others certainly, and one probably, from septic peritonitis. Forty cases of extra-uterine pregnancy in an advanced stage; operation after the death of the fetus, with conservative treatment of the sac; fourteen deaths (thirty-five per cent), twenty-six recoveries. Most operations were performed from one week to three months after the death of the fetus. In several cases the fetus had been dead from one to two years and upward; in one case for eight years. Eleven cases of advanced pregnancy, operated from two months to two and one-half years after death of fetus, with total extirpation of sac; four deaths (thirty-six per cent of recoveries).

Extra-uterine pregnancy, in whatever stage it may be, should be treated in the sense of a dangerous growth, and should be removed as such without reference to the life of the child. Early cases of tubal or ovarian pregnancy can almost invariably be treated with safety by total extirpation. This is true often even in advanced stages of pregnancy, or at term if it is confined to the tubes or the ovary. In case of interstitial tubal pregnancy the same is true. The stump, however, being connected with the uterus, the extraperitoneal method is preferable. In cases of intraligamentous pregnancy, the results of operation after the middle of the term are almost always fatal with an operator of ordinary skill. The results of operation after the death of the fetus are much better, and they improve as the time which has elapsed since the death increases. If the placenta is left he advises the application of benzoate of soda to prevent decomposition.

DR. CHRISTIAN FENGER read a paper on

THE VAGINAL OPERATION IN EXTRA-UTERINE PREGNANCY.¹

DR. W. W. JAGGARD read a paper entitled

A CASE OF EXTRA-UTERINE, RETROPERITONEAL PREGNANCY
ADVANCED TO THE SEVENTH MONTH; OPERATION, WITH
TERMINATION IN DEATH.²

DR. FRANKLIN H. MARTIN.—I should be very glad to hear discussed by the members of the Society a point that has not heretofore been touched upon, which is made by Lawson Tait, in regard to the method of operating in intraligamentous extra-uterine pregnancy—that is, by selecting the point of incision to the side of the linea alba on which pregnancy occurs—the point being, that in doing so the tumor may be opened without the necessity of opening the abdominal cavity. He bases that opinion upon cases that have been operated upon by him where it was unnecessary, in selecting that point of incision, to enter the abdominal cavity. He

¹ See original article, page 418. ² See original article, page 446.

thereby lessened the dangers of the operation very materially. The specimens of Hart and Barbour are well known, and help to substantiate the above statement. Frozen sections made by them of cases which have died during extra-uterine pregnancy show the peritoneum on the side of the pregnancy very materially elevated and carried far above the anterior and posterior portion of the uterus, and sometimes stripping it from the anterior wall of the abdomen. I should like to hear an expression of opinion in regard to this fact.

DR. D. T. NELSON.—I wish to say a word in regard to the fatal case that these gentlemen have felt so uncomfortable about. It seems to me they certainly should not, for I believe the patient was hopeless when first seen; surely she was in no condition for an abdominal section, which, it seems to me, was the only possible way of saving her, but that would have added a very considerable shock and would have turned the scale in the wrong direction.

As to operating on the side, which Dr. Martin has referred to, it seems to me that it is always desirable in opening these sacs to abstain from opening the abdominal cavity, and if we can operate low down and upon the side upon which the tumor is chiefly developed, we certainly have a better opportunity of opening the sac without opening the general peritoneal cavity. It was my privilege to see an operation abroad in which a diagnosis was made of extra-uterine pregnancy by some, and by others, with apparently equal confidence, of an abscess cavity. It was opened and the contents washed out, and it seemed impossible to determine whether or not it was the remains of an old extra-uterine pregnancy—there was nothing of the fetus to be found in it, nothing to indicate to a certainty placental tissue; and as the general peritoneal cavity was not opened, apparently the patient had an excellent chance of recovery.

The matter of leaving the placenta is a question that, it seems to me, has not been fully settled for all time, and by a study of these cases as we have opportunity I think much may be learned. I believe the theoretic method of treating such a case is to remove the placenta. Of course if the placenta is removed the hemorrhage must be stopped. It seems to me that is possible by ligating the large vessels that supply the sac, or by applying buried sutures in the walls of the sac at the time, or perhaps before, the placenta is removed, to prevent the possibility of hemorrhage. Then we have removed a very great cause of subsequent sepsis, which it is exceedingly important to accomplish. This, of course, is largely theory, but it seems to me it is important, if possible, to remove the placenta and control the hemorrhage at the same time.

DR. E. C. DUDLEY.—In reference to the proposition of Mr. Tait to open on the side corresponding to the location of the pregnancy, it is often impossible to say on which side the pregnancy originated; and even if the incision were made on that side, one could not always enter the sac without opening the abdominal cavity. About two years ago I did an operation for pelvic abscess; I made the usual incision in the median line, but found the abscess with adhesions was to one side of the median line; *i.e.*, if I had gone through the abdominal wall at this place I should have reached the abscess cavity without the least trouble and without entering the peritoneal cavity at all. Consequently, the first incision, which was very small, I closed tightly with stitches. A dressing of collodion might have been added to advantage. I then made a second incision directly over the abscess cavity, and entered it without invading the peritoneal cavity at all. This I have done twice, and the same thing could be done in extra-uterine pregnancy.

DR. T. J. WATKINS.—I would like to ask Dr. Parkes what he considers the indications for the enucleation of the sac in extra-uterine pregnancy. It does not seem to me that they are identical with the indications for enucleating parts of the broad ligament, because the sac in extra-uterine pregnancy contracts much more rapidly than in tumors of the broad ligament. Enucleation of the sac in extra-uterine pregnancy greatly increases the danger of infection, and I would like to ask when, if ever, removal of the placenta is advisable, and whether the hemorrhage following its removal can be controlled by packing the cavity with gauze.

DR. C. T. PARKES.—The three cases that have been presented have all been of patients that have been sterile for some length of time—in Dr. Fenger's case, some years; and in the case I presented, seven years. I am sure we have all been very much edified by the paper presented by Dr. Fenger. There is one thing especially to be remembered about these cases, that hardly any two of them are alike. The anatomical position of an extra-uterine pregnancy will affect the possibility of diagnosis. If it is an intraligamentous tumor the majority are attached to the abdominal wall sooner or later, and then there should be no hesitancy about operating. There should be no attempt made to remove the tumor, but the child should be removed from the incision in the sac, and the edges of the sac sewn to the incision in the abdominal walls. If the tumor is free in the abdominal cavity, the proper course of procedure is to remove it entire. An abdominal incision in the mid-line is the best for all purposes—for examination and proper diagnosis and the management of the tumor. The cases are exceptional, I believe, where a

lateral incision will allow one to enter the sac without entering the abdominal cavity, if the sac is not attached to the abdominal wall; if it is attached to the abdominal wall, it makes no difference whether the incision is made in the mid-line or laterally.

I was very much interested in the President's case, because it was posterior entirely to the peritoneum, and there was no apparent connection between the walls of the cyst (the cavity in which the fetus was contained) and the abdominal walls. It shows how difficult it would have been to have managed the case after an abdominal incision in that instance.

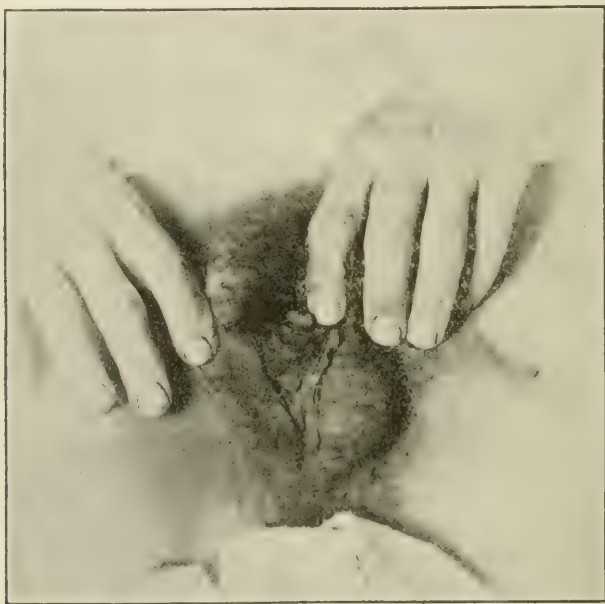
DR. FENGER.—I will first reply to Dr. Holmes in regard to transfusion. Of course it is always unfavorable to make transfusion where hemorrhage has not been stopped, or where, as in this case, it could not be stopped. I mean transfusion, or rather infundation, at the close of the operation, with the physiological saline solution with three per cent of sugar. When a prompt effect is wanted, intravenous infundation is always superior to the subcutaneous, and infusion is no more difficult.

In regard to Dr. Jaggard's case, as to the difficulty of diagnosis, it was almost insuperable in the first case reported. In this connection I will mention a case I met with about ten years ago. The patient was a woman about 40 years of age, who had been ten years sterile and would not believe she was pregnant. She was examined by the late Prof. Byford and others, who diagnosed an ovarian cyst. This was in the fourth or fifth month of pregnancy. I did not see her until later, when the indications of the existence of a living child were plain enough, but when the difficulty of a diagnosis between an intra-uterine and extra-uterine pregnancy, to me, as well as to a number of my colleagues, was insurmountable. When finally the symptoms of pain, etc., came on, we made ready for laparotomy. Upon gentle dilatation of the os the ovum could be felt. The patient was left alone, and in the course of a week or so normal delivery took place.

I will say to Dr. Watkins that hemorrhage is one of the greatest dangers in such cases. The placenta in extra-uterine pregnancy is very variable as to situation and size. Sometimes it is small and round, sometimes large and flat and extends over a very large surface of the sac, and may be attached to the uterus, bladder, or intestines. In the latter class of cases, control of hemorrhage from the placental circulation may be absolutely impossible.

To peel off the placenta and then try to stop hemorrhage, as Dr. Watkins suggested, by packing the sac with iodoform gauze, is also practically impossible, as far as past experience goes, for it has been tried over and over again in vain.

I must also disagree with Dr. Watkins' statement that it is easy to control sepsis. Even after the abdominal operation, which gives the most certainty of the non-introduction of sepsis from without, when the placenta is left there will be cases in which, although all antiseptic precautions may be taken, there will be symptoms of sepsis. This does not necessarily mean infection; it may mean intoxication from the decomposing placenta. There may be severe symptoms, with high temperature, and why not death? Death occurs from the intoxication of decomposition without microbes, but



not as often or as certainly as from sepsis. Thus leaving the placenta is always a source of danger from intoxication or from sepsis.

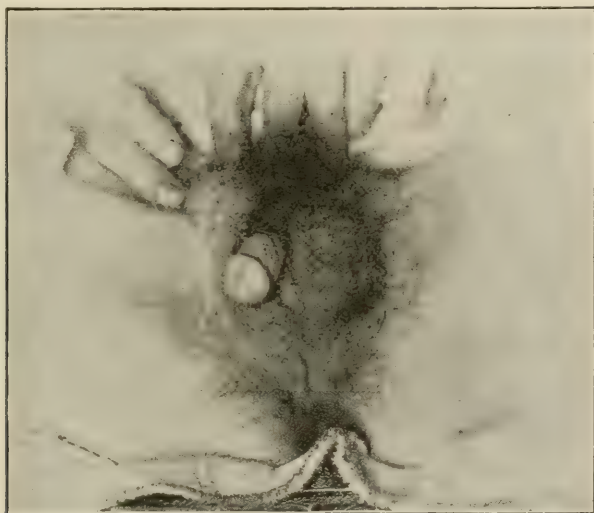
EXHIBITION OF A NEW UTERINE DILATOR.

DR. E. C. DUDLEY.—This instrument has the appearance of a Fritsch's uterine dilator. It is, however, not intended as such, although it might be used as a dilator. One-half is hollow from the handle to the tip of the blade. The hollow part is convex on the inner side and fits into the opposite concave blade. After the uterus has been dilated by means of other instruments, this instrument may be introduced, the blades separated, and water may be poured through the hollow blade from a fountain syringe connected with it by

means of its rubber tube. The fluid flows into the uterus through several small openings at the end of the hollow blade, and out of the uterus between the two diverging blades, thus giving a free outlet. I gave a description of this instrument to Shepard and Dudley in New York about four years ago, but it was not made until eight months ago, since which time I have used it with considerable satisfaction.

EXHIBITION OF PERINEAL SHIELD.

DR. T. J. WATKINS.—The use of this instrument is to shield the recently injured or repaired perineum from urine. It is easily manipulated by the patient. The narrow end is inserted below and under the urethra, the large end covering



and protecting the perineum. The instrument is made of hard rubber and may easily be kept clean. I have used it about twenty times in the after-treatment of perineorrhaphy, with most satisfactory results. It renders catheterization and douching after urination unnecessary, and is particularly useful when the patient does not have the services of a trained nurse.

DR. L. A. FROST, of the Illinois Central Hospital for the Insane, presented, by invitation, a paper entitled

A CASE OF HYPOSPADIAS (SPURIOUS HERMAPHRODITISM).

E. P., age 43, native of Germany; married to a man. Mentally in a state of mild dementia. Bodily contour, development, voice, and general appearance decidedly masculine.

Beard about six inches long, thin on cheeks, well developed on upper lip and chin; no hair on breast or limbs. Mammæ slightly developed, and in them is quite a development of glandular structure. Sexual organs imperfect. The mons veneris is more prominent than usually seen in men, and not so prominent as is usual in women. It is covered with hair which is abruptly limited, as in the female. The clitoris, or penis, is about one and one-half inches long, with well-developed glans; and the skin upon it is freely movable, but cannot be made to cover the glans. The under side of the penis is covered with mucous membrane about one-quarter inch wide, and secretes mucus. The penis is situated between two folds of skin resembling labia majora; the left labium majus contains a testicle which is firm and freely movable, having an epididymis which is small and firmly attached to the body of the testicle. The right labium is smaller and contains no testicle, but a small one can be felt low down in the inguinal canal. A body and epididymis can be felt in this one also, but so closely attached that both are almost as one body. The external appearance of the hypospadias is much like that of a vagina, and is about one and one-half inches deep, and the urethra opens into this about one inch above the external opening, and is felt as a small tubercle slightly upon the right of median line. No spermatozoa can be demonstrated in the secretion from urethra. When the subject was a child the parents were quite at a loss as to whether it was male or female. But they noticed that it passed water as a girl does, and so concluded that it was a girl, dressed it accordingly, and named it Elizabeth.

DR. W. W. JAGGARD had seen this individual in consultation with Dr. Frost, and requested him to write an account of the case for the Society. The disposition of the individual presented a practical difficulty. Where was his place in the asylum—among the males or among the females? The hospital authorities had placed him in the department for females, presumably because he could do less damage there than would doubtless be inflicted upon himself in the department for males. Examples of this congenital vice are by no means uncommon. In evidence of this statement, attention was called to the numerous examples reported by the secular press. Dr. Frost's case is presumably an example of pseudo-hermaphroditism, though only an autopsy can definitively establish the fact. True hermaphroditismus does occur, although there is a very general professional conviction that it is impossible. Up to the sixth week of embryonal life, according to Waldeyer, every individual is in the condition of an hermaphrodite. At this time differentiation begins to be visible. Cases of true hermaphroditismus have been demon-

strated by Heppner (*Arch. für Anat. und Physiol.*, 1870), Berthold (Kleb's "Lehrb. der path. Anat."), and others. The case mentioned by Dr. Fitch in a letter published in a recent number of the *New York Medical Journal* merits better description and more adequate evidence.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, March 21st, 1890.

DR. J. TABER JOHNSON, *President, in the Chair.*

DR. GEORGE P. FENWICK presented two papers :

I. HEMIPLEGIA FOLLOWING ABORTION. II. DELAYED DENTITION.¹

DR. BROMWELL opened the discussion upon the first paper. He said he thought the lesion occurred merely as a coincident hemiplegia, it having no other cause than a clot, and differed in no respect from ordinary hemiplegia due to muscular effort.

DR. S. S. ADAMS suggested that perhaps the patient had an atheromatous condition of the vessels, and that rupture resulted from the efforts in parturition.

DR. FRY believed that hemiplegia occurring during pregnancy was generally due to embolism arising from endocarditis. He was at present attending a patient in the last stages of cardiac disease who presented the following history: When pregnant with her second child (eleven years ago) she was in ill health, and one week before labor set in she suffered from dyspnea and spitting of blood. On third day of puerperium she was attacked with hemiplegia. Has had four children since. He had no doubt that her cardiac disease began during the second pregnancy and caused the paralysis.

DR. ADAMS thought the case hemorrhagic rather than due to an embolus, the rupture occurring near the "island of Reil."

DR. FRY asked the age of the patient, and, being told that she was 22, said that alone contradicted the theory that her hemiplegia was due to a clot. Diseased arteries did not occur so early in life. He still believed that embolism was the cause. Pregnancy is a common cause of endocarditis, and endocarditis a common cause of hemiplegia. The presence of fever in this patient did not assist in making a differential diagnosis between embolism and clot, as Dr. Adams seemed

¹ See original articles, pages 457 and 466.

to think. The woman had had a miscarriage, and retained the secundines twenty-four hours; so it is not astonishing she had fever.

DR. WINTER opened the discussion on the second part of Dr. Fenwick's paper, "Delayed Dentition." He said that he had had one or two cases of delayed dentition in his own practice, and found that it generally occurred in children below par physically, or in children of unhealthy parents.

He related the case of a young man who, shortly after marriage, was troubled with sore hands and sore throat, due to specific causes; later with rheumatism. His wife shortly after had an attack of rheumatism. A child was born, and at thirteen months had not a single tooth; he considered this due to syphilis of the man. He cited another case, of a child of healthy parents, who at fifteen months had only two inferior incisors. He was glad to know there was another practitioner in Washington who believed other diseases due to teething. He referred to a family of thirteen children, who all, when about four months old, had nervous symptoms and sometimes convulsions. In the later children he used the lancet and averted these nervous phenomena. He spoke of irregular dentition in adults, and mentioned a patient, a woman of 40 years, who still had some of her first teeth.

DR. ADAMS' views upon this subject had been very fully expressed in a paper he had presented to the Society some time ago. He cited two cases where diarrheal troubles were thought to be due to dentition, in which both were caused by intestinal irritation. In one a button was passed per rectum a few days later, in the other a mass of broken-up worms.

DR. COOK said that he did not believe that lancing the gums could *liberate* the teeth. Scarification would relieve congestion, but could in no way aid dentition.

DR. WINTER said that the congestion of the gums would destroy the second teeth, if not the first, so that by scarifying and thereby relieving the congestion the second teeth would be saved.

DR. ACKER agreed with the essayist and Dr. Winter in that we do have great trouble with teething. He spoke of cases in which there was high fever and bronchitis, where antipyretics have no effect; but as soon as the tooth is erupted all trouble disappears.

DR. BROMWELL referred to the case of a child who, with the eruption of each tooth, had slight bronchitis, which was relieved by no medication, but would disappear entirely upon the appearance of the tooth.

DR. MCARDLE said that he held a middle course, as neither is entirely satisfactory. He also has seen bronchial disorders at such times unaffected by treatment. At such periods the

entire alimentary tract is undergoing changes preparatory for another form of food, the system is in a transitory period, and at such times even slight disorders are aggravated.

DR. ACKER spoke of the difficulty in saying when a tooth would come through, and cited a case with intense congestion of the gums, which he was asked to lance. In this case the tooth did not come through for two months.

DR. ADAMS asked if the congestion was due to the tooth, or a gingivitis due to some other cause. If all errors in diet and the presence of foreign bodies be excluded, these may be due to teething; though it must be remembered that even where only cow's milk is given there may be some error in diet.

DR. COOK said that the teeth were developing from the sixth week of utero gestation, and he could not see why they should produce so much trouble only at the period of eruption and at no other time.

DR. CUTHBERT said he believed in lancing gums in certain cases; it is certainly a most humane course, there being no doubt of the efficacy of lancing an inflamed gum.

DR. FENWICK said, in closing, that he did not believe in lancing the gums in every case, though he thought it a good plan sometimes.

ABSTRACT.

LEOPOLD: THE OPERATIVE TREATMENT OF UTERINE MYOMATA (with four plates) (*Archiv für Gynäkologie*, Band xxxviii., Heft 1).—This is a valuable contribution to the subject of fibroids of the uterus, based on the study of about 400 cases of fibroids that came under Leopold's treatment during the past six years. Of these, 140 were operated upon: 28 enucleations per vaginam, 35 castrations, 56 myotomies, and 21 total extirpations of the whole diseased organ through the vagina.

There is still considerable difference of opinion among the abler gynecologists as to the indications, value, and technique of the various operations for fibroids. In this work Leopold analyzes his material and the results of his operations, with the purpose of deducing therefrom what operations are indicated for the various kinds of cases, and what relations these operations bear to each other. He concisely considers the etiology, symptoms, prognosis, and medical and otherwise palliative treatment, laying stress only on what, to him, are the essential and determining facts; but he treats at length the anatomy of these tumors, their size,

shape, relation to, and influence on, the surrounding organs, and their histology. As he himself says, the choice of the method of operation depends on the anatomical configuration of the tumor; the study of this and the appreciation of its seat, size, and direction of growth is an essential preliminary for every operation.

Concerning the Etiology.—He considers Cohnheim's theory as to the origin of tumors the simplest and most consistent explanation for fibroids. The nucleus for the future fibroid exists already, according to this, in the fetal uterus. Injuries, irritations, and other causes in all probability only stimulate the growth of an already existing, possibly microscopical, fibroid. It is only after the uterus becomes physiologically active and menstruation has set in that the fibroid grows and gives its symptoms; besides, fibroids have been found in children. Hence, also, the common history of dysmenorrhea, menorrhagia, periodic pelvic and lumbar pains, neuralgias, etc., since the onset of menstruation; the patient being considered hysterical, and treated as such, until later a fibroid of the uterus is discovered and explains the symptoms from the beginning. A much greater impetus to the growth of fibroids than menstruation is given by pregnancies, abortions, placental remains, intra-uterine tents, and other irritating treatments; but, above all, the repeated congestions due to cohabitation. Hence the great disproportion of the cases between the married and the unmarried (and between the sterile and those who have borne). Of his 140 operated cases 81 per cent were married (58 per cent had had children and 23 per cent not) and 19 per cent unmarried.

The Anatomy of Fibroids.—In a case before us it is not sufficient to make out the text-book distinction whether submucous, interstitial, or subserous; but we must also determine the relation of the tumor to the neighboring organs, the probable branching of the uterine artery, the position of the tubes and ovaries, the kind of distortion that the uterine cavity has suffered, and the condition of its mucous membrane. We can then know what the probable histological condition of the fibroid is, what influence it has had on the general condition of the patient, and what operation is indicated in this particular case.

As to size, Leopold's specimens showed fibroids from that of a pea to a mass of fifty pounds and more. In most of his cases the tumor had reached the size of a child's head. As to number, he very seldom found only one tumor in a uterus; usually besides one large one there were a number of smaller ones present. So in one specimen there was a large submucous fibroid, the removal of which apparently would have promised a cure; but there were a large number of small fibroids

in the walls which were perfectly able to continue the hemorrhage and other symptoms.

Such multiplicity of tumors gives to the uterus that peculiar knobbed form, and as the organ becomes larger the protuberances grow in various directions—directions of least resistance—carry the appendages into every conceivable position, and lengthen and distort the uterine cavity. A uterus with but one tumor has a more regular outline. If the tumor is submucous, the uterus is spherical or egg-shaped and the adnexa are not much displaced. According as the tumor is developed from the anterior or posterior wall, the uterus will bulge that way and the pressure symptoms will vary correspondingly. A myoma may be half interstitial and half submucous, with one of its long curvatures directly under the mucosa and the other embedded in the muscularis; the uterine cavity will then be much elongated and curved, and the mucous membrane have a large area. The organ will then become gourd-shaped, the appendages of the diseased side will be carried up high, while those of the other side may be crowded down deep into the pelvis, perhaps inaccessible for castration.

An interstitial fibroid growing in the middle of one side will develop that side of the uterus in every direction, carry the corresponding appendages high up, force the other ones down, and obliquely elongate the uterine cavity. If it grows in the fundus, the tumor squats on the uterus like a sphere and has the appendages fastened to it below; or it may grow like an interstitial pregnancy, from one corner, and hide the appendages of that side completely under it.

A subserous fibroid the size of an apple, developed from the posterior wall of the uterus, will not change the position of the appendages, but may cause intolerable pressure symptoms of the rectum and pelvic nerves. Such a subserous fibroid may be sessile and require the removal of the uterus, or it may have a pedicle and then be easily removed. A middle-sized subserous fibroid springing from the anterior wall above the bladder will grow freely upward and crowd the uterus deep down into the pelvis. Such a fibroid is easily removed. Such a fibroid, however, may also grow to an enormous size; it will then push the peritoneum before it and become firmly attached to the abdominal wall. It will then have no pedicle, and would have to be dissected, extraperitoneally, from its extensive bed. The most unfavorable conditions arise when a subserous fibroid grows from the whole anterior wall or from the lower part of it. It will then carry the bladder a variable distance above the symphysis. The bladder is in such a case dissected off with great difficulty, and may easily be injured. A pedicle cannot be ob-

tained intra- or extraperitoneally, and the hemorrhage may be very great.

The *histological changes* in a fibroid depend on its seat, size, and freedom of its blood supply. Submucous fibroids are of firm and almost tendinous consistence so long as they remain in the uterine cavity. As large ones are being developed into the vagina, and so compressed between the promontory and symphysis, they become edematous, degenerate, and may become inflamed and suppurating. Interstitial fibroids undergo changes from edematous softening to lymphangiectatic and cystic cavity formation. The extent of these changes may often be recognized at sight of the broad ligament. If such a large and irregular tumor is compressed between the cervix and symphysis, so that its venous and lymphatic circulation is impeded, the broad ligament teems with congested veins and lymphatics as thick as the little finger. Such a tumor may be almost fluid and simulate an ovarian cyst before the operation.

Wyder's studies on the changes that the *mucous membrane* undergoes in uteri with submucous or interstitial fibroids, are in the main correct, yet the author has seen large submucous fibroids covered by a thin, atrophied mucous membrane. These may also give rise to serious hemorrhages; and in some of these cases there is secreted intermenstrually such large quantities of a sero-lymph that it becomes a severe drain on the system.

Malignant growths may occur independently in the uterus or ovaries, and then extend into the fibroid. He has had a case of primary cancerous degeneration in a fibroid. A fibroid may undergo sarcomatous degeneration, and then there may be metastatic growths in the peritoneum and omentum. Such cases have been described as metastatic fibroids.

Symptoms.—Fibroid pains are the earliest, and may exist for years before the tumor grows large enough to be readily palpated. These may have the character of pure dysmenorrhea, more seldom of uterine colic, and may also occur intermenstrually. Hemorrhage is not always in proportion to the size of the tumor. Very small fibroids may give rise to large hemorrhages. He especially warns against misconstruing the slight hemorrhages in very anemic patients with large fibroids. It is not a favorable sign; these patients have no more blood to lose; the tumor grows right on, and the patient becomes weaker and weaker. Instead of blood these patients may lose large quantities of a stringy, coagulated lymph-like fluid. Leopold lays the greatest stress on recognizing the early degeneration of the heart which occurs in so many of these cases as a result of the anemia. The heart musculature becomes atrophied or pale and fatty. These patients have

hemic murmurs, are easily dyspneic, have an anxious appearance, poor appetite, are nervous and sleepless. The pulse is 90 to 100, small, compressible, and at the least operative attempt runs up to 120 to 140. It may thus happen that an apparently strong patient succumbs, a few hours after an operation, from heart failure. Where such a heart is suspected, that operation should be chosen that can be done quickest.

Treatment.—Ergot and hydrastis canadensis are very often useful in checking hemorrhage and diminishing the size of the tumor. But good results are limited to interstitial fibroids, and it is a very tedious treatment. Frequently, after the treatment is stopped, the hemorrhage returns, and in some cases the tumor grows on in spite of these drugs. He has never seen a fibroid disappear from the use of ergot. He says very little about the electrical treatment; thinks that at present it can be looked upon only as a hemostatic measure. Intra-uterine injections for hemorrhage are dangerous and should never be used.

Curetting he does with the strictest antiseptic precautions. The result is very good in cases of small interstitial or submucous fibroids, and may last for some time. After curetting he swabs out the uterine cavity with liquor ferri sesquichlor., and gives ergot in injections for some weeks after. He speaks very favorably of the dilatation of the cervical canal with laminaria tents. It is very effectual in stopping the hemorrhage in many cases, especially in cases of multiple myomata and smaller tumors. He prefers the gradual dilatation with these tents to other methods, as they cause no tear and so give no chance for infection. The tents are prepared so as to be perfectly aseptic. He has a patient with an irregular myomatous uterus the size of a child's head, in whom he dilated the cervix three years ago, and who has had no metrorrhagia since, although the tumor has not lessened in size.

If the above measures have been tried and have been unsuccessful, or if it is necessary to operate from the first, the following operations are to be considered:

1. *Enucleation per vaginam*, for submucous fibroids.
2. *Castration*, for interstitial and subserous fibroids up to the size of a child's head, provided that the patient's condition permits a laparotomy and that the appendages can be reached. If not,
3. *Vaginal Total Extirpation* (without removal of the appendages).
4. *Myotomy*, if the tumor is larger than a child's head. Even when the tumor is very large we will have to be satisfied with castration, if the patient's condition is very poor or the relations of the tumor such that myotomy is too hazardous.

ENUCLEATION.—He enucleated twenty-eight times, with one death. The death occurred in a very anemic patient, who was brought to the hospital with an already suppurating fibroid and in septic condition. The operation is indicated in all cases of submucous fibroids where the tumor is no larger than a child's head and is accessible. The mistake is often made to remove in this way a too large fibroid or an interstitial one. Where necessary the cervix is to be dilated with aseptically prepared laminaria tents. The dilatation should be done gradually in the course of three or four days, until three to six tents lie in the cervix together.

At the operation he dilates further with Hegar's dilators, and, if necessary, makes two lateral incisions in the cervix to gain more space; prefers, however, not to cut, as it then easily tears further. If necessary, pieces may be cut out of the tumor so that it can be handled easier. After removal he packs the uterine cavity with iodoform gauze, which is removed in two or three days.

CASTRATION.—In twenty-seven of thirty-four cases both ovaries could be removed. In five, only one was accessible, and in two both ovaries were inaccessible. In twenty of the twenty-seven cases he could palpate the ovaries before the operation, but in only one of the seven incomplete castrations could the ovaries be felt. He thinks with greater experience he will be able in all cases to determine by palpation the position of the appendages and their accessibility for operation. Of the twenty-seven complete castrations, two died from sepsis and one (highly anemic patient) from heart failure. In all the remaining twenty-four patients the menstruation soon ceased, they gained strength quickly, and the tumors more or less rapidly diminished in size.

He operates rapidly on very anemic patients; in all cases makes the incision sufficiently long to be able to find the appendages quickly. He frequently extends the incision down to the symphysis, and he has even cut transversely the insertion of the rectus. With a large, flat sponge the intestines are held away so as to freely expose the pelvic organs. Where the appendages lie deep he has an assistant push the uterus up by his hand in the patient's rectum.

MYOTOMY.—Under this heading he includes all operations for the removal of fibroids through the abdominal incision, with or without the removal of the whole uterus. All myotomies are serious operations. Every case should be carefully studied, so as to determine upon the justifiability of doing the operation.

He reports fifty-six cases. In forty-nine cases the growth was interstitial or interstitial and subserous; in seventeen subserous alone. In the forty-nine the tumors ranged in size

from a man's head to an enormous growth. All of these patients had suffered from exhausting metrorrhagia, long standing anemia, unendurable pressure symptoms, and edema and pain in the limbs so as to prevent locomotion.

The pedicle was left intraperitoneal in twenty-two cases, with five deaths (twenty-two and seven-tenths per cent); extraperitoneal in thirty-four cases, with seven deaths twenty and five-tenths per cent). In all, twelve deaths (twenty-one and four-tenths per cent). The five deaths of the cases where the pedicle was left intraperitoneal were all due to septic peritonitis, the infection coming from the cervical canal. Of the other seven deaths, three were due to hemorrhage during the operation, three to exhaustion in highly anemic patients, and one to anemia due to accidentally including both ureters in the ligature. As other operators have had the same percentage of deaths following intraperitoneal treatment of the pedicle, he considers this as yet a dangerous procedure. The technique of attending to the pedicle will have to be much improved, he says, before it will be as safe to treat the pedicle intraperitoneally as to leave it extraperitoneal. He carefully and conscientiously analyzed his twelve fatal cases, and showed what mistakes may in future be avoided and what improvements in technique suggest themselves. This analysis is very instructive. In the three that died from exhaustion, the autopsies revealed anemic degeneration of all the viscera, but especially of the heart.

The indications for myotomy are: the size of the fibroid mass being that of a child's head or larger, the tumor rapidly growing, exhausting metrorrhagia, intolerable pain or pressure symptoms, and malignant degeneration of a fibroid.

He considers the question of extra- or intraperitoneal treatment of the pedicle at length, and, basing his conclusions on his experience, he says: When only a small opening has been made into the uterine cavity, the uterine artery should be ligated on both sides; the exposed mucosa cut out in funnel shape, the opening closed by sutures according to Schroeder's method, and the peritoneum sutured together so as to cover the wound; then the stump may be safely dropped into the peritoneal cavity. If, however, the uterine cavity is widely opened, or the tissue of the stump soft, friable, brittle, or cavernous, or if the condition of the patient is so poor that we do not care to tax the absorptive power of the peritoneum, it is far safer, and even necessary, to leave the pedicle extraperitoneal.

In some of his later operations, he simplified the operation by lifting the whole mass out of the abdominal cavity, ligating off the broad ligament if necessary, closing the abdominal

wound all around, and then throwing the rubber ligature about the pedicle and cutting off the mass above.

Where the tumor is developed mainly between the broad ligaments, or so deep in the pelvic cavity that there is no pedicle about which a ligature can be thrown, he incises the capsule of the tumor above, enucleates mass after mass, splitting capsule after capsule—the tumor being pushed up from below by an assistant to facilitate this. If after all no pedicle is obtained, he sews the whole uterus into the abdominal wound and packs the cavity with iodoform gauze. The vessels can be ligated during the operation, so that there need be but little hemorrhage.

VAGINAL TOTAL EXTIRPATION.—This operation comes very frequently in competition with castration. It is indicated where, milder measures having been unsuccessful, single or multiple myomata no larger than a child's head have undergone inflammatory or degenerative changes, or have caused such pain, hemorrhages, or pressure symptoms that the health or life of the patient is threatened; or in cases in which the appendages on one or both sides are inaccessible, or so diseased and adherent that castration is out of the question.

In cases where both operations may be considered, vaginal total extirpation has various advantages over castration. It does not bring on the climacteric, which is frequently very undesirable. It is safer in very anemic and run-down patients.

It is especially important to remember that this operation is still practical in cases where the general condition of the patient is so bad that castration would be a dangerous operation—dangerous on account of the laparotomy itself, the shock of the necessary exposure of the intestines, the possible infection, and the longer time that it frequently takes on account of the misplaced condition of the appendages.

The author has done twenty-one extirpations for fibroids, with three deaths. One died of infection, and two shortly after the operation from accidental causes. He does not hesitate to make sufficiently large lateral incisions in the perineum when the vagina is too narrow or the tumor large. If the tumor is of considerable size, he cuts a portion of it out before removing the rest of the uterus.

[This work of Prof. Leopold is so concisely written, and so crowded with valuable observations and facts, that it is difficult to abstract it with justice. The whole article must be read by those who wish to be abreast of the best and latest in this important chapter of gynecology.]

SAMUEL L. WEBER.

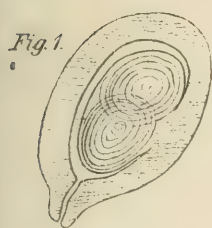


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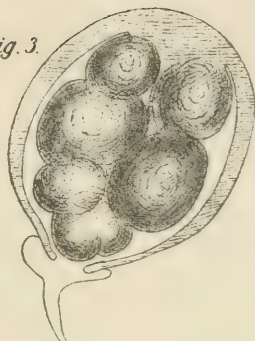


Fig. 3.

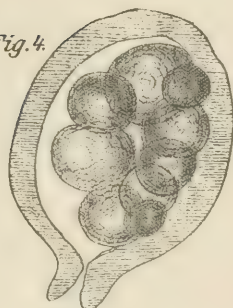


Fig. 4.



Fig. 2.

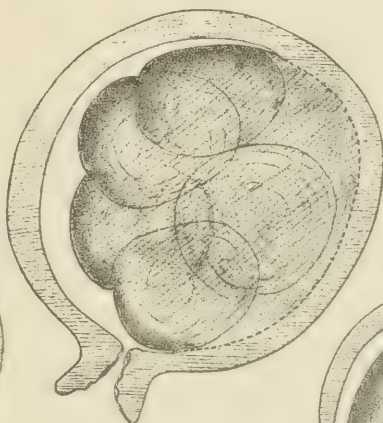


Fig. 6.

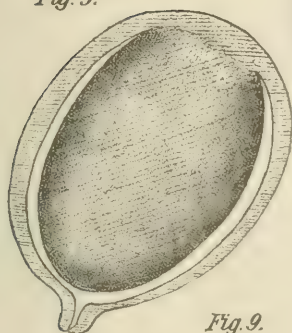


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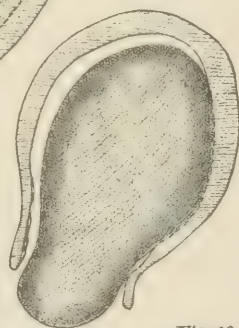


Fig. 7.

Fig. 8.



Fig. 9.

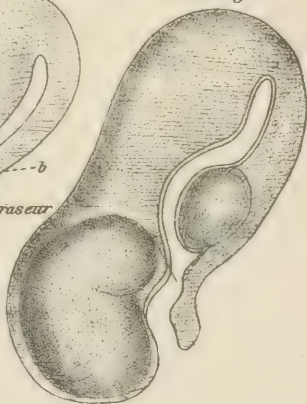
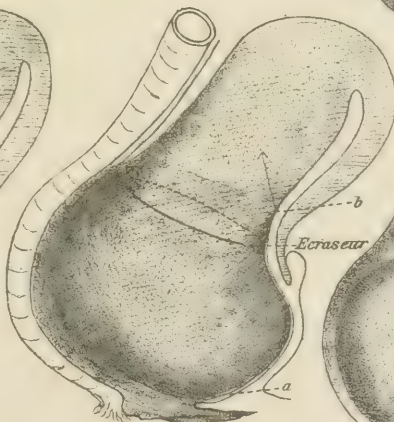


PLATE II.

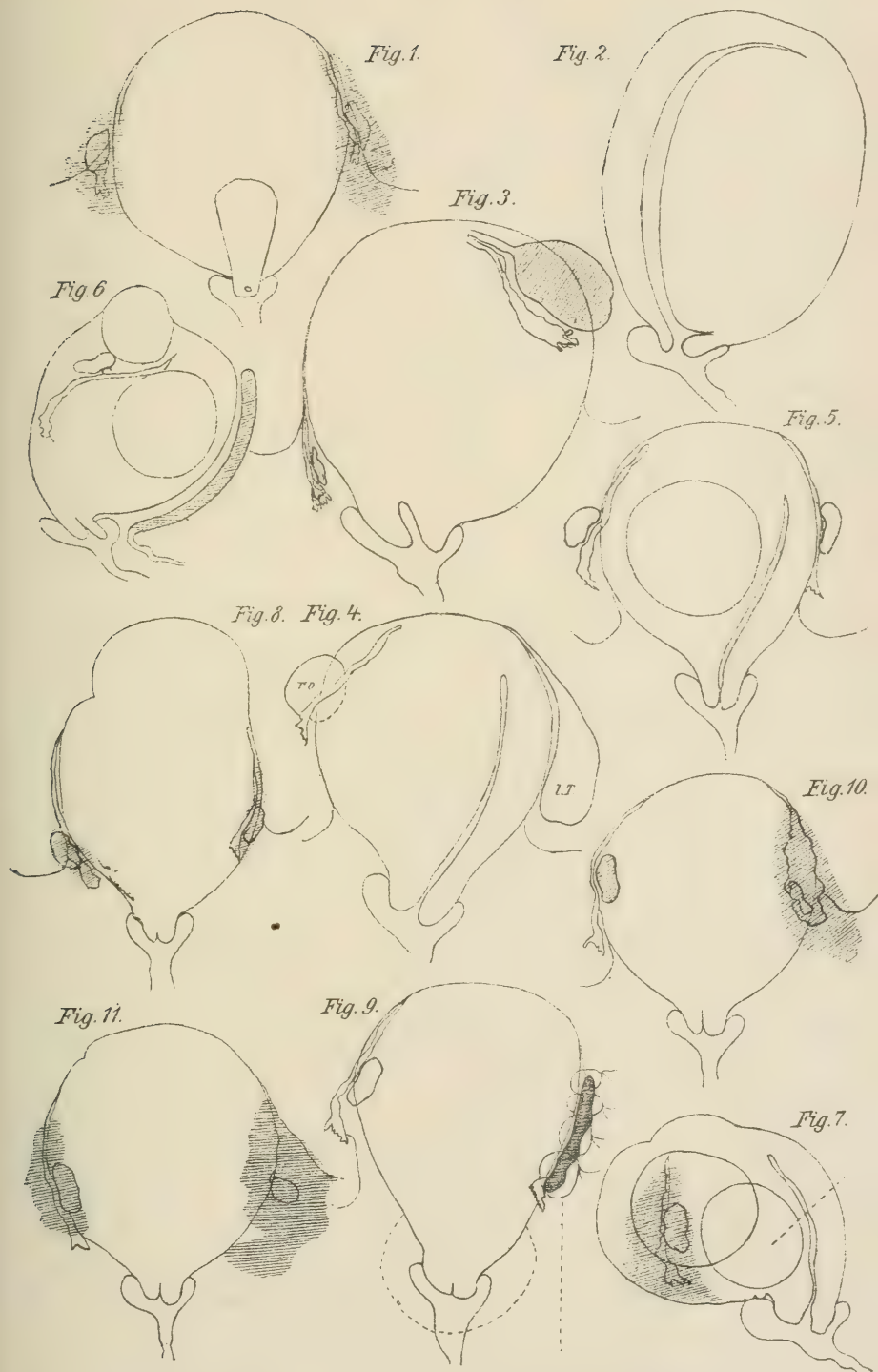


Fig. 1.

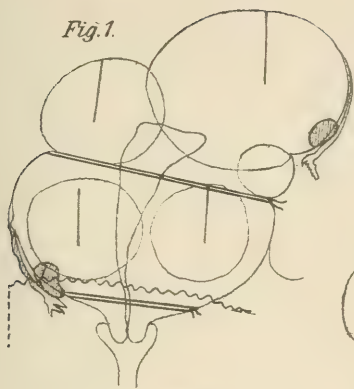


Fig. 3.

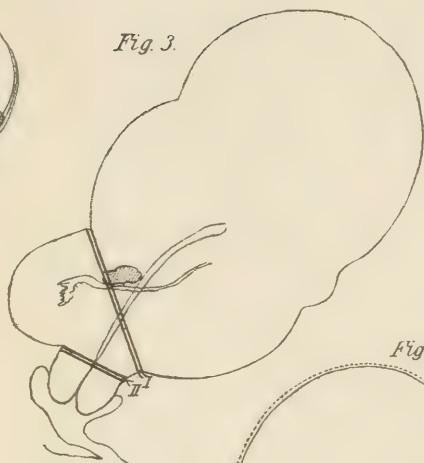


Fig. 2.

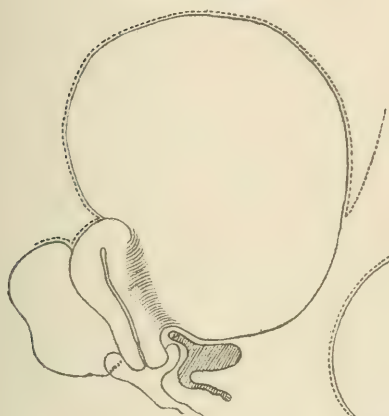


Fig. 5.

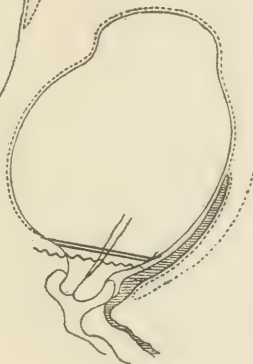


Fig. 4.

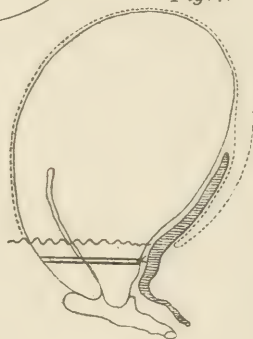


Fig. 6.

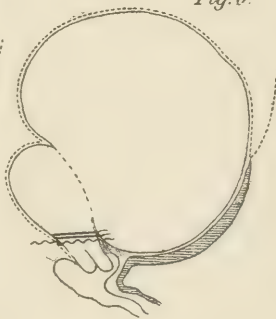


Fig. 9.

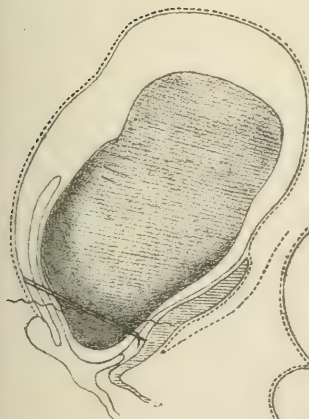


Fig. 8.



Fig. 7.

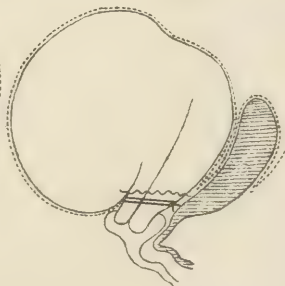


Fig. 1.



Fig. 3.

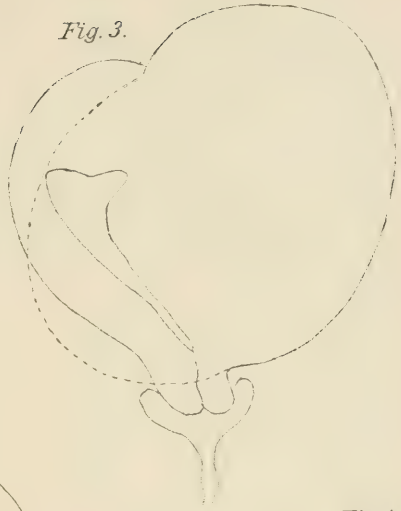


Fig. 2.

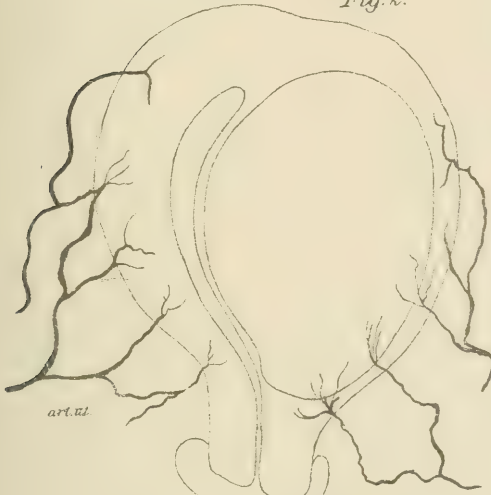


Fig. 4.

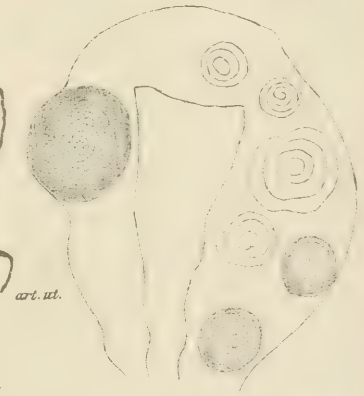


Fig. 5.

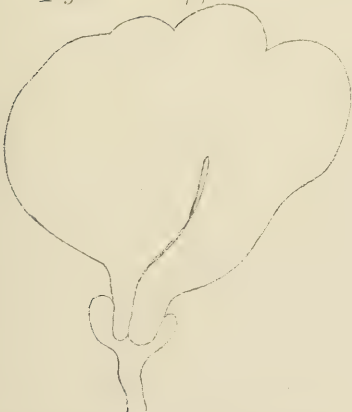
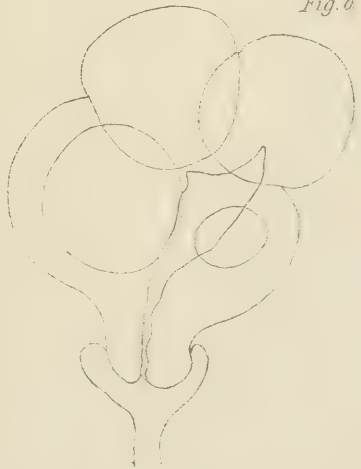


Fig. 6.



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ORIGINAL COMMUNICATIONS.

HYSTERIA.¹

BY

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THE remarks I propose to present on hysteria in this paper are altogether unfinished, undigested, and immature. The ideas I have here put down are perhaps scarcely more than superficial suggestions that will certainly not bear rigid criticism. Unwise as it may be to present them thus incompletely, still they may be sufficient to indicate, however imperfectly, a line of thought upon this disease somewhat different from that followed by the recognized authorities. The protean malady must submit to being presented in as many different ways as it exhibits itself to us.

¹ Read before the Washington Obstetrical and Gynecological Society, April 25th, 1890.

The literature of hysteria is exceedingly voluminous. The nature and origin of the disease have puzzled the medical mind for many centuries; and the puzzle still remains unsolved. There must be something wrong in the method of investigation: at least it would appear so from the meagre results that have ensued. The phenomena and symptoms exhibited have been closely studied and graphically described, but the "why and wherefore" of these phenomena are not at all satisfactorily explained.

To illustrate this point let me insert a few definitions of hysteria from the authors of leading text books.

In Gould's "New Medical Dictionary," just published, hysteria is defined as "a functional disturbance of the nervous system, supposed by early physicians to be due to the disordered condition of the womb. It is now often considered a reflex neurosis; not with certainty known whether it is due to structural alteration of any part of the central nervous system, or to abnormal blood supply, etc."

In Aitken's "Practice of Medicine" (vol. ii., page 339) this is the definition:

"A complex morbid condition of all the cerebral functions, of a chronic kind, probably associated with some morbid state of the emotional or sensori-motor centres, and presenting every variety of alteration, so that the phenomena of hysteria simulate and mimic the phenomena of almost every other disease, while the most common and characteristic features of the affection are certain motorial changes of a convulsive nature and usually of paroxysmal occurrence."

Roberts' "Practice of Medicine" (page 792) gives this definition: "Hysteria is a very complex morbid condition, of the nature of which it is impossible to speak definitely. It belongs to the nervous disorders, but its exact seat cannot be localized, though probably the brain is most disturbed."

Bennett's "Practice of Medicine" (page 448) classifies hysteria with chorea, tetanus, etc., under a special section of "Spinal Disorders." The author writes as follows: "*Hysteria*—any kind of perverted nervous function, connected with uterine derangement. Nothing can be more vague than this term."

Flint ("Practice of Medicine," page 692) writes: "The name hysteria, as commonly used, embraces a multiplicity of morbid phenomena. It is used to denote an abnormal condition of the nervous system and the mind which enters largely, as a morbid element, into a great variety of affections."

Bristowe ("Theory and Practice of Medicine," page 1007) says: "It is difficult to describe, still more difficult to define, hysteria. It may, however, in general terms be said to be a functional disorder of the nervous system, occurring mainly in females from the age of puberty upward, in which the will, the intellect, the emotions, sensation, motion, and the various functions which are under the influence of the nervous system, are involved, or apt to be involved, in a greater or less degree."

Graily Hewitt ("Diseases of Women," page 417) remarks: "In considering the subject of hysteria, I feel that I am endeavoring to handle a subject treated of ever since medicine was a science, but never satisfactorily. The investigations concerning it have never come to a point, have never resulted in any proposition or position calculated to receive universal acceptance; its nature is confessedly open, in fact, to doubt. My early reading . . . was such as to give me the impression that there was very little to be learned about it. Much that was stated seemed vague and contradictory, and the endeavor to make a satisfactory study of the subject appeared to be so much time thrown away." These last remarks of Dr. Hewitt refer to his "early reading," but I think they would be equally applicable to the latest literary productions on the subject of hysteria.

Perhaps the best dissertation on hysteria of modern date is that by Prof. J. Russell Reynolds in his "System of Medicine" (vol. ii., pp. 82-107). On page 83 he remarks: "It is almost impossible to frame an accurate 'definition' of the disease." Further on (p. 97) he states: "There is, however, one thing common to all cases of hysteria, and that is a perturbed condition of the nervous system. The essential character of this morbid state is an exaggeration of involuntary motility, and a *diminution of the power of the will* (all *italics mine*); the emotional, sensational, and reflex movements are

in excess, while the *voluntary are defective*. . . . The will is determined by anything rather than by judgment, while *ideas, feelings, and fancies exert an undue influence*. . . . Reflex movements, which in health are under some control, are not only exaggerated in their individual intensity, as a part of the hysteric state, but, from the *weakness of volition*, are allowed to run such riot that they pass beyond all bounds of healthy influence."

From these definitions it will be at once seen that only the phenomena (symptoms) of the disease are stated. No one of these definitions attempts to indicate, with any degree of precision, the nature and origin of the observed phenomena, further than to ascribe them to functional derangement of the nervous system.

But *why* should this functional perturbation of the nervous system occur? To answer this question is the first step toward comprehending the nature of the disease. Until it is answered we can make but little progress. In attempting to answer it, let us try to approach the matter, by way of experiment, from several different standpoints. Perhaps we might start out with the supposition that there are different *varieties of hysteria*, whose etiology and pathology require to be separately considered. The term "*hysteria*" is almost as indefinite as the term "*fever*." Both words convey the idea of a well-known group of phenomena; but as the "*fever*" group varies so much in its nature and origin, giving us many varieties of fever, so, it would seem likely, may this be true of the "*hysteria*" group.

To simplify the present discussion, let us try the experiment of eliminating all forms of hysteria but one, and so confine our investigation to this one alone. The other forms may fall in line afterward or stay out. There is no more reason why all forms should have the same explanation than there is that all fevers should have the same etiology and pathology, which we know they have not.

I propose then, as an experiment, that we consider the most common form of hysteria as it occurs in the female; and perhaps it might be well to assign this condition a definite name. Let us call it *sexual hysteria in woman*. Hundreds of cases of hysteria have been recorded in males, but these do not well

belong to an "Obstetrical and Gynecological Society," nor shall I attempt any explanation of them. Though there are many cases on record, they are, nevertheless, extremely rare when compared with the more common form of hysteria in women.

Returning, then, and confining our remarks to *sexual hysteria in woman*, let us, again by way of experiment, assume as a working hypothesis that a typical case of hysteria, *when it first begins* in a young woman, is *not, strictly speaking, a disease at all*, but rather a mere modification in the physiological government of the body, executed by the automatic action of the ruling nervous system, *for some definite, natural purpose*. The ultimate objects that underlie all the functions of the body as they are determined by the government of the nervous system, are mainly two, viz., the *preservation of the life of the individual*, which comes first and is of first importance; and, second, the *preservation or perpetuation of the species*. From what we already know of hysteria, there is much to suggest that the hysteric process would be more nearly allied with the second object than with the first. But, reserving any statement on this point for the present, let us set down some of the most prominent phenomena that are recognized as common characteristics of the hysteric process.

To prevent confusion I name these characteristics in an accidentally arranged numerical order.

1. The *time of life* during which hysteria *most usually occurs* is between puberty and the "change of life," *i.e.*, during the age of reproduction. To this there are exceptions, just as, exceptionally, menstruation, ovulation, and reproduction may occur before the normal period of puberty or after the climacteric.

2. It is *not a solitary disease*, and does not occur when the subject is alone. True, the patient may be temporarily alone, as in a room adjoining one occupied by other persons who may be expected to come at any time, upon any outcry or sign of distress indicating the occurrence of a hysteric paroxysm. Should the patient, however, be thoroughly convinced that no one is near, and not likely to be for a long time, the hysteric attack will not occur.

3. In the customary hysteric attack the individual *appears*

to be unconscious, but is not really so. The eyes are closed, so that an untaught observer would conclude: This woman does not or cannot see. On being spoken to no reply is obtained, and the same untaught observer readily concludes: This woman is either deaf or dumb, or both, as well as blind, or she is unconscious. On being touched or handled, provided it be not so roughly as to cause actual pain, no recognition of feeling is manifested, no resistance is exhibited. Should the arm be placed extended, it remains so; flex it, and it remains flexed. So of other parts of the body.

4. Every woman who exhibits the phenomena of a hysterical attack is always *ashamed of it* afterwards—instinctively ashamed. She will always deny, never acknowledge it; and when accused or told of it will become offended and angry. This is an inherited and fundamental feature of the process.

5. It occurs most often in single women, or rather in those, whether single or married, whose sexual wants remain ungratified. "It is sometimes cured by marriage" (Watson's "Practice," p. 455). "Marriage makes it worse, unless pregnancy occur" (Graily Hewitt, page 425). Hippocrates said: "A woman's best remedy in this disease is to marry and bear children" ("Cyclop. Pract. Med.," vol. ii., p. 573). J. Connelly in this "Cyclopedia" further remarks upon "the disappearance of hysteria after a long-desired marriage," and that "in many of these cases all the mischief is removed by marriage, which, by awakening the natural functions and normal sympathies, allays the whole series of morbid actions" (vol. ii., p. 573). "Carter on Hysteria" (pp. 35, 36) observes: "The sexual passion is more concerned than any other single emotion, and perhaps as much as all others put together, in the production of the hysterical paroxysm." He further remarks upon the liability to hysteria in women of strong passions temporarily or permanently separated from their husbands. It has been attributed (I think by Sir Benj. Brodie) to unsuccessful coitus from the pain due to a large penis.

6. The hysterical woman does not present any external evidence of disease—does not look like an ill woman. *Her beauty* (whatever its degree) *is not impaired*. Even during convulsion "there is no *distortion* of the countenance" (Aitken's "Practice," vol. ii., p. 340). Dr. Wood remarks (quoted

by Aitken, p. 341): "One of the most striking circumstances connected with the disease is the general integrity of the nutritive process; the patient continues plump and rosy." Even in cases long laid up from hysterical joint affections, it has been especially remarked (Aitken, vol. ii., p. 341) "there is no wasting of the *glutei* muscles, nor flattening of the *nates*." And in cases of so-called hysterical paralysis the apparently paralyzed muscles do not atrophy.

In falling during a "fit" (Reynolds' "System of Medicine," vol. ii., p. 96) "the patient does not fall in such a manner as to hurt herself or tear her clothes; there is somebody there who shall see the phenomenon." . . . "The hysteric patient gathers her robe around her and falls gracefully." In a word, the process of hysteria, pure and simple, as it is in the beginning, does *not impair the physical beauty of the woman*. Indeed, many of these patients are peculiarly attractive to the other sex.

7. "There are many facts to show that warmth of climate and the seasons of spring and summer conduce to a production of the hysteric condition, but it has yet to be shown what is the element comprised under those terms which is of etiologic moment" (Reynolds' "System of Medicine," vol. ii., p. 85). Yet we know:

"What men call gallantry, and gods adultery,
Is much more common where the climate's sultry."
—BYRON'S *Don Juan*, canto i., verse lxiii.

"Summer's indeed a very dangerous season,
And so is spring about the end of May;
The sun, no doubt, is the prevailing reason."
—*Don Juan*, canto i., verse cii.

8. The hysterical paroxysm is *a temporary and short affair*. The helpless creature, who seems to have lost all her senses and sensations, is in a few minutes up and about, apparently as well as ever.

9. Certain regions of the body which appear to be painfully hyperesthetic are relieved by firm pressure, rough handling, and succussion, while light touches or gentle pressure are "agonizing in the extreme." If attention be directed elsewhere, the touch gives no pain.

10. Idleness, want of occupation, a life without a purpose,

strongly conduce to hysteria. "The liability to hysteria," says Sir Benj. Brodie ("Lectures on Local Nervous Affections," p. 37), "is in fact, among females, one of the *severest penalties of high civilization*. It is among those who enjoy what are supposed to be the advantages of affluence and an easy life that we are to look for cases of this description, not among those who, fulfilling the edict of the Deity, 'eat their bread in the sweat of their brow.'"

11. The hysteric patient delights in evoking sympathy. She loves to be fondled and caressed; and, usually, the more of this treatment she receives the worse she gets.

12. The *will* of the hysteric is perverted and defective, while ideas, thoughts, fancies, and emotions exhibit excessive activity. She believes she cannot speak, or move, or walk, but, on sudden fear or alarm, does either and all very quickly. Hence she *appears* to be "acting a part." In some instances a hysterical "fit," although not strictly volitional, is yet a matter of surrender, and might be prevented under the pressure of an adequate motive. "The existence of real danger" (*i.e.*, danger to life) "throws hysteria into temporary abeyance" (Carter, page 144).

I have now recounted twelve of the common characteristics of sexual hysteria in woman—characteristic phenomena *determined by the governing nervous system*. The nervous system is so organized as to produce these results instinctively and automatically. Since we have not yet been able to discover any utility in the actions thus set up by the nervous centres of government, we speak of hysteria (see definitions previously given) as a "perturbed," "disordered," and "abnormal" function (or condition) of the nervous system.

But is there no "method" in this "madness" of the central government? Why has this nervous system commanded, or permitted, in these cases, that *emotion* should run riot and "*volition*" be temporarily put in abeyance? By what inherited instinct, or property, acquired through ages of ancestry, is the government of the body impelled to this unique performance? To answer this question we must go back to primitive woman: no adequate reply will be possible in civilized communities. We must regard a human organism

as an animal, for such it is ; and such a regard cannot demean or disgrace it.

Now, "it has been seen that in the lower animals the effects produced by *emotional* excitement are immediately made subservient to some *useful purpose*, having reference either to the *reproduction of the species* or to the *preservation or sustentation of the individual* ; and it is probable that in them each kind of feeling is invariably followed by its special and proper consequences. But in man this is far from being the case" ("Carter on Hysteria," page 18).

Let us, however, go back to aboriginal woman—to women of the woods and the fields. Let us picture to ourselves a young aboriginal Venus in one of her earliest hysteric paroxysms. In doing so let us not forget some of the twelve characteristics previously mentioned. She will not be "acting her part" alone, or, if alone, it will be in a place where some one else is likely soon to discover her. It is only necessary to assume *one* unwarranted fact (and that is one of a limited two) to understand all the rest, viz., that this "some one else" shall be a *male* instead of a female. To carry out this hypothetical case, let this Venus be now discovered by a youthful Apollo of the woods, a man with fully developed animal instincts, but without moral, legal, or religious restraint—without, in fact, the environments of civilization. He and she, like any other animals, are in the free fields of Nature. He cannot but observe to himself : This woman is not dead ; she breathes and is warm ; she does not look ill ; her beauty is well preserved ; she is well nourished, "plump and rosy." He speaks to her ; she neither hears (apparently) nor responds. Her eyes are closed. He touches, moves, and handles her at his pleasure ; she makes no resistance. What will this primitive Apollo do next ? He will cure the fit and bring the woman back to consciousness, satisfy her "*emotion*," and restore her "*volition*"—not by delicate touches that might be "agonizing" to her hyperesthetic skin, but by vigorous massage, passive motion, and succussion that would be painless. The emotional process, on the part of the woman, would end, perhaps, with mingled laughter, tears, and *shame* ; and when accused afterwards of the part which the ancestrally acquired properties of her nervous system had compelled her to act, as a preliminary

to the event, what woman would not deny it and be angry? But the course of Nature having been followed, the natural purpose of the hysteric paroxysm accomplished, there would remain as a result of the treatment—instead of one pining, discontented woman—two happy people and the probable beginning of a third.

Speaking, then, of natural hysteria when it first begins and under natural circumstances (that is to say, without the environments and restraints—moral, social, legal, educational, and religious—of civilization), we should, from what has now been said, reach some such definition as the following:

Natural, primary, sexual hysteria in woman is a temporary modification of the nervous government of the body and in the distribution of nerve force (occurring for the most part, as we see it to-day, in prudish women of strong moral principle whose volition has disposed them to resist every sort of liberty or approach from the other sex), consisting in a transient abdication of the general, volitional, and self-preservational EGO, while the reins of government are temporarily assigned to the usurping power of the reproductive EGO, so that the reproductive government overrules the government by volition, and thus, as it were, forcibly compels the woman's organism to so dispose itself, at a suitable time and place, as to allow, invite, and secure the approach of the other sex, whether she will or not, to the end that Nature's imperious demand for reproduction shall be obeyed.

This is the *natural function* of primary sexual hysteria considered physiologically. Can we, strictly speaking, call it "*disease*"?

Before proceeding further I must indulge myself in a somewhat personal remark. What I have now said might, by an ill-disposed critic, be contorted or misconstrued into an accusation that every hysterical woman is guilty of impure desires and is the victim of sexual passion. This is not so. On the contrary, what I have stated tends rather to exonerate, and completely exonerate, the hysterical person from any such charge. The view I have presented traces back the origin of the phenomena of hysteria to the automatic action of a governing nervous system, acting in obedience to the great principle

of race perpetuation, which has been developed and handed down from generation to generation through long ages of ancestry. The hysterical patient is no more to blame and no more responsible for her condition than she is accountable for the number of vertebræ in her spinal column, the foundation of which was laid thousands of generations ago.

Returning now to remark further upon the duplex government of the body by the nervous system in hysteria cases, I think it most probable that the so-called "double personality" and "double consciousness" of hysteric persons, which of late years has so much puzzled the French psychologists, is to be referred to a want of agreement or balance of power between the *reproductive ego*, the object of whose government is *preservation of the race*, and the *self-preservative ego*, the object of whose administration is *preservation of the individual*. When a woman says "*I will*," it is her first personality—what she calls *herself*—that wills. It is by this will power that she decides to walk, to work, obtain food, and perform all the acts necessary to maintain individual life in the struggle for existence. If now, when she reaches the age of puberty and child-bearing, the imperious demands of the reproductive ego clamor for fulfilment, and she again says "*I will*" and acts accordingly, then there arises no conflict between the two departments of government, and, as a rule, no hysteria. On the other hand, should she decide, with regard to the reproductive demand, to say "*I will not*" and act accordingly, at once there occurs a want of harmony—"a disturbance"—between the two departments of government. The department of the creative activities, sustained, as it were, by the hereditary rights of ancestral precedents, practices, and habits, is clamorous for the exercise of its reproductive function. The executive government of the woman's first personality, her volitional ego (for extraneous reasons of her own, usually of a sociological rather than physiological kind), opposes and resists the reproductive demand. These are the conditions under which hysteria is *liable* to occur, and to which its origin may be traced. When it *does* occur, there is produced a temporary subjugation of personal volition and personal consciousness, automatically compelling the woman's organism to surrender to the government of her reproductive

personality, either with or without the designed physiological purpose of the process being accomplished—in civilized life, often without it; in prehistoric or natural life, usually with it. While, as just stated, hysteria is *liable* to occur under the conditions given, it does not always do so. This is easily explicable as follows: Should the woman's habits, and occupation, and modes of thought be of such a kind as to insure a daily expenditure of nervous energy in muscular exercise, intellectual activity, social amusement, and unemotional play, etc., so as to absorb any surplus of nerve force that would otherwise flow towards the reproductive object, then she will escape hysteria. Her nerve energies are, in fact, being expended in matters pertaining to the self-preservational object—upon matters naturally directed towards obtaining a living. But now change the conditions: place the woman in abject idleness, both muscular and mental; supply her with the most luxurious food, which she obtains without any effort of her own; add solitude instead of social diversion, and literature which shall direct her thoughts into emotional channels; let there be *no expenditure of nerve force in the struggle for existence*, and, therefore, no natural channel for distributing surplus nerve energy other than reproduction, which last she, of her *own will*, refuses to undertake—let this mode of life be continued, and sooner or later hysteria will usually result.

There are many familiar events that illustrate this duplex government of the body, and which show the normal superior influence of the self-preservational ego over the reproductive one. And this comparative rank is as it should be. The life of the individual is necessarily of *first* importance; for if *that* be sacrificed in securing impregnation, it avails nothing: the ovule cannot develop in the dead. Hence we find, a patient in the quasi-unconscious condition of hysteria, should she be deluged with cold water or burned with fire, will resume consciousness, get up, and run away. The water and fire convey to the governing nervous system the impression of *danger to life*. At once the temporary administration of the reproductive ego is deposed; at once the self-preservational ego reassumes the reins of government. Only thoroughly frighten a hysterical woman—convey to her

nerve centres the impression that *life is in danger*—and though she should have remained (apparently) paralyzed for years, she will get up and walk. The two departments of the government instantly readjust their powers in order to protect the *individual life*. It occurred to me some time ago that the treatment of a hysterical attack in accordance with the principle above stated—*i.e.*, by calling into play the action of the *self-preservational* ego—might conveniently be achieved by simply holding the woman's nose and closing her mouth, so as to convey to the central nervous system the impression of *danger to life* from *suspended respiration*. I was therefore gratified to find later on that such a plan had been long ago tested and found successful. Dr. Hewitt speaks of it as "Dr. Hare's plan of suffocation." In describing a case ("Hewitt on Women," pp. 422, 423) Dr. Hewitt says: "Slapping of the face and placing strong liquor ammonia under the nostrils had no effect, but she was quickly subdued by Dr. Hare's plan of suffocation" . . . "Subsequent to this she had many similar attacks, sometimes as many as five or six in a day. They were all stopped by the suffocating process."

The self-preservational nerve centres have acquired, ages ago, a proper appreciation of the importance to life of *respiration*; they soon appreciate the *besoin de respirer*, and automatically adopt measures to remove it. Possibly, if we could make a device to produce a sound closely resembling that of a rattlesnake, and place it near the person of a hysteric woman (without her knowledge), the nerve centres, by a sort of ancestral memory, would perhaps recognize the *signal of danger* and prompt the woman to speedily change her place, much as a mouse *instinctively* avoids its natural enemy, the cat.

This dual government, or double personality, of the human body—the two departments of *reproduction* and *self-preservation*—have been referred to, almost unknowingly, by the most ancient of writers. Even good old St. Paul, who is stated to have written his Epistle to the Romans in the year 60 A.D., tells us (in chapter vii.) that sin had wrought in him "*all manner of concupiscence*" or *lust* (verse 8). Then he goes on to describe the conflict of himself with his second or reproductive personality, thus: "That which I do, I allow

not: for what I would, that do I not; but what I hate, that do I." "To will is present with me; but how to perform that which is good, I find not." "For the good that I would, I do not: but the evil which I would not, that I do." "Now if I do that I would not, *it is no more I that do it*, but sin that dwelleth in me." "I find then a law, that when I would do good, evil is present with me." "I see another law in my *members*, warring against the law of my *mind*, and bringing me into captivity to the law of sin which is in my members." This simply illustrates the conflict between the *emotions* of the *reproductive* ego and the *volition* of the *personal, self-preservative* ego—a conflict noted over and over again by poets and dramatists in modern times, as illustrated in one of Byron's characters (in "Don Juan"), who, "swearing she would *ne'er* consent, *consented*." So Buckingham, in counselling Gloster to accept the crown, says:

"And be not easily won to our requests ;

Play the *maid's part*, still answer *nay*, and *take it*."

—*Richard III.*, act iii., scene vii.

In addition to these Biblical, poetic, and dramatic references, let me cite a few quotations of more modern date and more scientific value. In referring to the discussion on double consciousness, raised by himself, at the Paris Congress of Physiological Psychology recently, Dr. Alfred Binet says: "The problem that I seek to solve is, to understand how and why in hysterical patients a division of consciousness takes place" (*Open Court*, December 12th, 1889, No. 120, page 1983). "In other words, the question we ask is, What are the psycho-physiological conditions that determine the formation of a second consciousness?" (page 1984, *ibid.*). He further observes (*Open Court*, No. 112, October 17th, 1889, page 1887): "We know of observations in which this second personality, ever awake, is seen gradually to develop more and more, and to assume the initiative in conduct, instead of the first personality which is temporarily annihilated." Again: "The facts above set forth have led me to the assumption that there may exist in hysterical patients two rational faculties, that are mutually ignorant of each other." And still again he repeats: "I believe it satisfactorily established, in a general way, that two states of consciousness, not

known to each other, can co-exist in the mind of an hysterical patient" (page 1887).

This, perhaps, is not the place nor a proper society for the discussion of psychological matters. I leave it, therefore, after remarking that I believe the true key to the understanding of Binet's problems, as well as to the phenomena of so called "hypnotism," "somnambulism," "automatism," etc., is to be found by recognizing *the two departments of physiological government—creative and conservative—individual preservation and race preservation*. When the two departments execute their respective functions of government successfully and in harmony with each other and with Nature, no abnormal phenomena will be encountered. When otherwise, the result will be reversed.

Since I have spoken of "*primary sexual hysteria in woman*" as a modification of nerve government designed to accomplish a physiological purpose, it is very apparent that old-standing chronic cases, lasting for years and drifting into hysterio-epilepsy, etc., require a different explanation. This explanation will be found, perhaps, somewhat as follows: We must constantly bear in mind that in dealing with the hysteric process of to-day we are dealing with it while the woman is surrounded by the environments of *civilization*, and not by the ancient environments of *ancestral times*. This makes a vast difference. To study successfully any natural process we *must* study it in its *natural* state, with its *natural* surroundings. Now, it is scarcely likely that primary ancestral hysteria would ever fail (perhaps not once in a thousand times), with ancestral surroundings, of securing the accomplishment of the physiological purpose for which I have suggested it was designed; and this would at once end the hysteric process. On the contrary, in civilized life, the hysteric process *not* attaining its designed result, we find it being repeated over and over, five or six times a day, for perhaps weeks, months, or even years, in obedience to the same nervous mechanism of government which prompted it in the beginning. Hence what should naturally have been a transient and temporary affair has become the reverse. That portion of the nervous system other than what belongs to the intellectual and volitional ego of the individual, has no *intelligence* at all,

but is simply an *automaton*, acting in obedience to qualities acquired from ancestors. It cannot appreciate, therefore, in determining the hysteric process, that the design of the process is to be thwarted by the customs of modern society, by the laws of states, the edicts of thrones, and the tenets of religion, which constitute so potent an element in the environments of civilization. Under these circumstances the hysteric process is useless and superfluous, and ludicrously impotent of any physiological result. From frequent repetition it becomes a habit of the nervous system—"nerve force flows readily through habitually used channels"—hence it is likely to recur, and does so recur, under slight emotions that have *no direct relation with reproduction*. The original natural object of hysteria (which ought to have been promptly attained) becomes buried so deeply in accumulated and repeated disappointments that the automatic nervous system has no inherited quality that enables it to meet the *unnatural* emergency. It keeps on, like any other machine, all the time instigating the woman's body to do over and over again that which, *under the circumstances*, is useless. If the physiological view of hysteria (as I have presented it) be true, the occurrence of the hysteric process in the presence of females, and when no male is near, becomes ludicrous. The imperious impulses and emotions of the sexual instinct are so overpowering and mandatory; the preparations for reproduction in the female organism, and the consequent accumulation of nerve force, so extensive, that the preliminary event of insemination cannot be ruthlessly and recklessly postponed over and over again without seriously disturbing the functions of the nervous system; and this "functional disturbance of the nervous system" is the disturbance constantly referred to in the text-book definitions of hysteria previously quoted. It is, in fact, a disturbance in the *gubernatorial function of the nervous system*, consequent upon a part of the territory governed (the reproductive part) refusing to obey those laws of Nature which it is the *chief* office of the nervous system to administer and enforce as best it can.

There is yet another class of cases that need further explanation, viz., those cases occurring in *married women who have had children*. Of these I might say, though not perhaps quite

fairly, they may not belong to the "*sexual hysteria*" we are here considering. Emotions *other than sexual* may disturb the functions of the nervous system and produce quasi-physiological hysteria. Furthermore, are we always quite sure that the hysterical habit was not acquired *before* marriage, and, having become chronic, persists, in spite of marriage, afterward? Moreover, the results of childbirth or abortions may leave lesions, traumatic or otherwise, of the reproductive organs themselves, which may produce, as it were *artificially*, functional disturbance of the nervous system resembling the hysteria we have called physiological. The process of emesis, produced by poisonous matters in the stomach, is, though not a normal process, yet a *natural* one, and serves the *purpose* of ejecting the offending substances. Emesis, however, may be produced by tickling the throat with a feather, even though the stomach be empty. The one is *natural* (and useful) emesis, the other *artificial* (and useless). So with *natural* and *artificial* hysteria. The nervous system, like an automatic machine, reacts in obedience to environing actions, and the hysteric and emetic processes are produced without any intelligent perception on the part of the gubernatorial automaton as to what the result will be. Hysteria, however, from organic lesion of the reproductive organs is not so common as was once supposed. I agree with Goodell, who, in an excellent lecture in the Philadelphia *Medical News* (December 7th, 1889), lays great stress upon the statement that the symptoms so often attributed to uterine diseases are really *neurotic* troubles.

TREATMENT.

To test the truth of what has been thus far said, let us next consider the principles of treatment deducible therefrom, and their efficacy. There are several methods of treatment which experience has demonstrated are severally efficacious in different cases.

1. *Marriage*.—This is Nature's remedy, and will, in the large majority of cases, be effectual if not unduly postponed.

2. *Oöphorectomy*.—When the *ovaries* are taken out the patient becomes a female eunuch. The organs of reproduction, over which the nervous system presided, are no longer performing, or likely or able to perform, their natural function;

the body goes back to its ante-puberic, or on to its post-climacteric, state. Physiological hysteria can now accomplish no utilitarian purpose. It will cease to occur, for the reasons stated.

3. *Narcotics, Alcoholics, etc.*—By opium, alcoholic stimulants, etc., which *stimulate* the nerve centres pertaining to the cerebral functions of *volition* and the *self-preservative* ego, these centres may temporarily regain the ascendancy over, and take precedence of, the *reproductive* ego, and so dispel or postpone hysteria. The benefit, however, could be only temporary, and the method of treatment should *not* be resorted to, on account of the liability of the nervous system to attain the opium or alcohol habit, either of which would be more dangerous than the hysteric process.

4. *Intellectual and Muscular Exercise.*—These exercises simply mean phases of effort on the part of the self-preservative ego to maintain life—to struggle for existence. They require constant *volitional* effort on the part of the patient, and when *volitional* effort has become a habit, whether from necessity or choice, the nerve force will flow through these now accustomed channels, will be diverted from the channel leading to reproductive effort, and the hysteria will be relieved. The volitional effort on the part of the patient, however, must be enforced by *circumstances* (poverty, etc.), or by the *will* of another person compelling her to perform the requisite amount of mental and muscular work or play. In the absence of *marriage*, and without *spaying*, this constitutes the *most rational and scientific method of curing chronic hysteria*; but it is exceedingly difficult, tedious, and bothersome, and requires that the “other person” exercising volitional control of the patient should be almost constantly present.

5. *Valerian, etc.*—There is something extremely unique and inexplicable in the effect of valerian upon hysteric patients. The subject of hysteria may present all the phenomena of hysteric “unconsciousness,” and, when a little fluid extract of valerian is forced into her mouth, recover all her faculties *in a few seconds*. This we have all repeatedly witnessed. The valerian cannot have been absorbed so quickly. Can its peculiar efficacy be attributed to its peculiar *odor*? It may here be observed that musk, camphor, asafetida, etc.—medicines

with strong odors—are among the best medicinal remedies for hysteria. The odor of burnt rags or burnt feathers or hair—popular remedies for hysteric paroxysms—may be more easily explained: they may suggest to the self-preservative nerve centres the *idea* of *fire*, and consequently *danger to life*. Was there, in ancestral times, any snake, or other natural enemy of man, that possessed the odor of valerian? If so, the effect of the medicine in awakening the self-preservative ego by conveying a sense of *danger to life*, and so restoring normal consciousness, would be apparent.

The points considered, or suggested for consideration, in the foregoing remarks, are as follows:

1. The natural history, origin, and pathology of hysteria have not been thus far satisfactorily explained. The disease has been regarded as a functional disturbance of the nervous system, the nature of which is not settled.

2. Are there not different varieties of hysteria, as there are different varieties of fever?

3. The most common form of hysteria in women is intimately related with the reproductive and sexual functions, and should be designated as “sexual hysteria in women.”

4. Is it strictly correct to call this condition a “*disease*”? Should it not rather be regarded as a functional modification of the nervous government of the body, designed for the purpose of race preservation?

5. Many of the more common characteristics of hysteria—viz., (*a*) the *time of life* at which it occurs; (*b*) its not being a *solitary* disease; (*c*) the unconsciousness exhibited being only *apparent*, not real; (*d*) the woman being *ashamed* of it afterward; (*e*) its occurrence chiefly in women who do not reproduce, and its cure by reproduction; (*f*) the woman preserving her beauty; (*g*) the paroxysms being short and temporary; (*h*) the season of the year at which it is most prevalent; (*i*) its occurrence in the higher walks of life; (*j*) the patient longing for sympathy, etc.—suggest that the hysteric process among primitive women in prehistoric times was favorable to secure the approach of the other sex.

6. The influence of the hysteric process in this direction indicates that primarily, and without the environments of

civilization, approach of the other sex would by it be accomplished.

7. The modification of nerve government which produces the hysteric process consists in a temporary abdication of the self-conservative ego and an usurpation of power by the reproductive ego. The conflict between these two departments of government has been unknowingly recognized for many centuries, and explains the well-known "double personality" or "double consciousness" of hysterical patients.

8. The physiological *function* of hysteria, as it occurred before civilization, was to secure insemination. The purpose was *then* usually accomplished. The function of hysteria in civilized communities *not* being accomplished, the cases become chronic and drift into all sorts of irregularities, far removed from the original type, and presenting phenomena that, taken alone, appear to conceal, cover up, or even antagonize any idea of functional utility.

9. The *rationale* of modern successful methods of treatment is in accord with the preceding views, and tends to corroborate their correctness.

THE STEPS OF THE CESAREAN SECTION—THE DO'S AND THE DON'T'S.¹

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(With thirteen illustrations.)

INTRODUCTORY.

WITH the recent extension of the field of the "modern" "conservative" "Saenger" Cesarean section, I feel there has arisen the necessity for a handy, simplified, condensed description of the technique of the operation.

Having recently completed my fourth successful Cesarean

¹ Read before the Baltimore Obstetrical and Gynecological Society, March 11th, 1891.

operation, in the Johns Hopkins Hospital, I have again carefully reviewed the various steps of this important procedure, and believe that the present *multum in parvo* will prove neither too short nor too long for the surgeon who desires to carefully review the steps before proceeding to an operation.

I have made several departures from routine practice, in facilitating drainage with my pad, in clamping the cord instead of tying it as the child is delivered, and in recommending, in cases free from all suspicion of sepsis, the use of a half-deep suture for accurate approximation of the edges of the uterine wound, between the deep sutures, instead of the sero-serous sutures.

For practical purposes, the Cesarean operation may be described as consisting of the following steps:

I. *Selection of the Case.*—The Cesarean section is *absolutely necessary* to save life in women with flat pelves in which the conjugata vera measures 6 cm. or less, or in generally contracted pelves of $6\frac{1}{2}$ cm. or less.

The indication is also *absolute* when the pelvis is choked by a bony tumor, or a fibroid tumor which cannot be displaced, or by extensive cellulitis, or in some cases of extensive cancer of the uterus and vagina.

In pelves from 6 and $6\frac{1}{2}$ cm. up to 8 and 9 cm., flat and generally contracted pelves, respectively, the Cesarean section is purely an *elective procedure*, standing in juxtaposition to artificially induced premature labor, spontaneous delivery (rare), delivery by forceps, turning, and craniotomy.

Under these circumstances the Cesarean section may be performed when previous labors have demonstrated the futility of attempting to save the life of the child by any other method.

II. *The Preparation of the Patient.*—When possible, daily preparatory baths should be given for one week, cleansing the skin and stimulating its circulation, and thus enhancing its activity as an emunctory. A vaginal douche of boric acid (two per cent), night and morning, renders important service by cleansing an area in direct communication with the field of operation. Immediately before the operation the vagina should be washed very thoroughly with soap and water.

The bowels must be regulated, being freely opened from

four to eight hours before the operation. The genitals are shaved when the patient is placed on the operating table.

III. *The Time to Operate.*—Operate at the end of pregnancy. If this can be accurately determined, it is not necessary to wait for labor pains. It is always better to operate before the amnion has broken.

IV. *The Instruments needed* are a small knife, a pair of scissors, a needle holder and needles, a half-dozen artery forceps, towels, gauze, ligatures, and sponges—all absolutely aseptic.

V. *Cleanliness at the Operation.*—The whole field must be

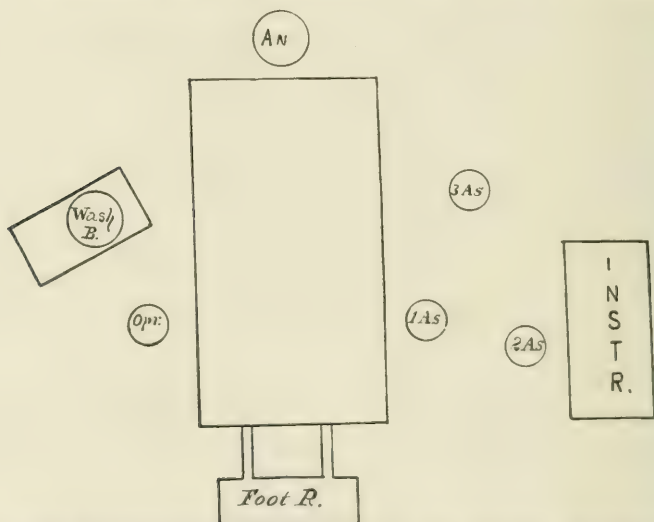


FIG. 1 shows the arrangement of assistants, etc., at the operation. The table stands in the middle, long enough for the patient's body, with a foot rest below. The anesthetizer sits at the head of the table (An). The operator stands to the patient's right (Opr), with a wash bowl full of warm water to his left, in which to dip his hands from time to time. Directly opposite to him stands his first assistant (1As), backed by the second assistant (2As), and the table carrying the instruments, sponges, etc. Two or three feet away stands the third assistant waiting to take the child.

microscopically clean. This aseptic condition must include the patient's abdomen and genitals, the operator's hands, arms, and at least the external portion of the clothing. The assistants also must be equally clean. The operator must continually have a lively consciousness of the aseptic condition of all instruments, gauze, towels, and every material liable in any way to come into direct or indirect contact with the patient's abdomen.

VI. *Number and Arrangement of the Assistants.*—Four are needed. One gives the anesthetic; the chief assistant stands opposite to the operator, assisting him at the wound in every step, while a third quickly passes sponges and ligatures, artery forceps, etc., as they are needed, and a fourth waits ready to receive the child.

VII. *Is the Child Alive?*—Just before operating make sure that the child is living, and determine accurately its position in utero; this may save the error of operating on a

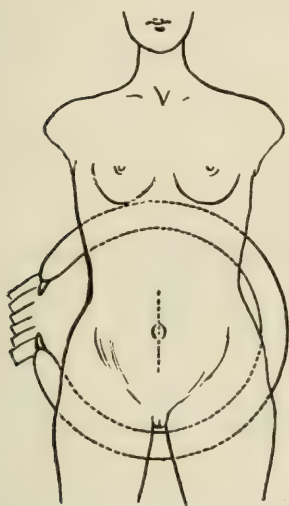


FIG. 2.

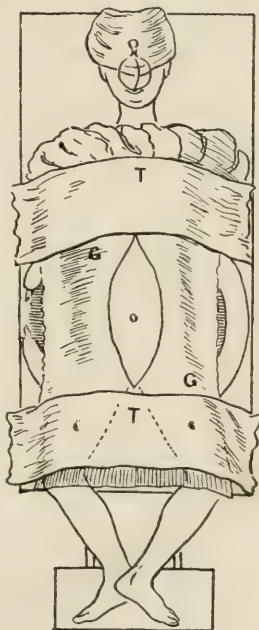


FIG. 3.

FIG. 2 shows the patient placed on the writer's ovariectomy pad for drainage, facilitating the abundant use of water, without discomfort to the operator, and without soaking the patient's night dress, which is pulled up under the shoulders. The dotted line in the middle shows the position of the abdominal incision.

FIG. 3 shows the patient anesthetized on the table, prepared for the operation. G G is the piece of gauze, reaching from chest to knees, covered above and below by two prepared towels, T T, and slit open in the middle, exposing the field of operation.

relative indication, for a dead child, as well as facilitating the delivery.

VIII. *The Posture of the Patient, and the Immediate Preparation of the Field for the Operation.*—She should be placed upon the ovariectomy drainage pad, on a short table, with her knees at the edge so that the feet rest on the seat of a chair

turned with its back to the table. This is an easy, relaxed posture and facilitates cleansing the vagina. The abdomen is then again thoroughly washed with soap and water, with as much care as if for the first time. The legs, from the lower part of the thighs down, are next wrapped in a blanket which is covered with rubber cloth. A piece of gauze, long enough to reach from the breast to the knees, and wide enough to hang down over both flanks, is laid on the abdomen, and two towels, wrung out of hot water, laid one across the lower part of the chest, and the other over the upper part of the thighs, thus covering the body from breast to knees. The gauze is

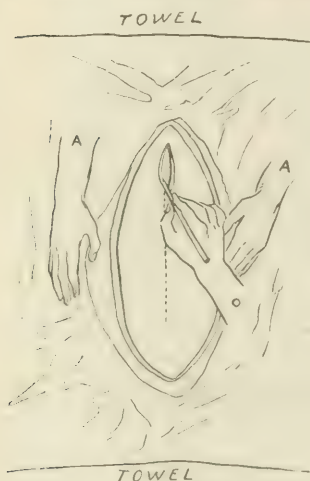


FIG. 4.

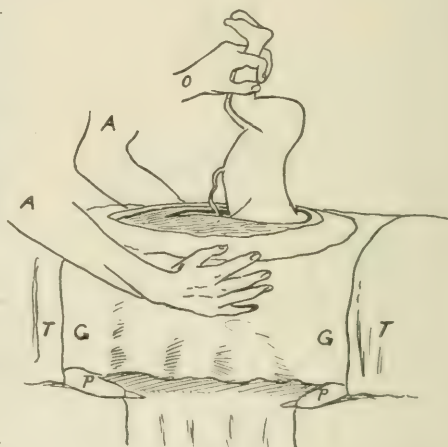


FIG. 5.

FIG. 4 shows hands of the assistant (A A) engaged in pressing the abdominal walls in on the uterus while the operator (O) is incising the uterus.

FIG. 5.—The operator (O), having grasped the child by both feet, is delivering it, while the assistant (A A) constantly keeps the abdominal walls pressed in on the uterus. G G, gauze; T T, towels above and below; P P, the drainage pad.

then slit open in the middle line and drawn aside, baring the whole uterine eminence. Through this opening, thus hemmed in and protected on all sides, the operation is performed in an artificially created aseptic field.

IX. *The Abdominal Incision* should be made in the median line, over the most prominent part of the tumor, about one-third above and two-thirds below, or half above and half below, the umbilicus. Unless unusually large vessels are severed, do not waste time in clamping and tying off bleeding points.

X. *Incision of the Uterus in Situ.*—As soon as the abdomen is opened, the prominent uterus, lying directly behind the peritoneum, fills the lumen of the incision. The assistant should at once press the abdominal walls of both sides down against the uterus, protecting the abdominal cavity from contamination with the uterine contents. The operator assures himself that he has selected the median line of the uterus, and then makes an incision from 15 to 18 cm. in length, from a point just below the fundus, down towards the cervix. This incision is cautiously extended through the whole thickness of the uterine wall until a part of the membranes is exposed.

XI. *Breaking through the Membranes; Placenta Previa Cesareana.*—The unruptured amnion pouts into the wound,

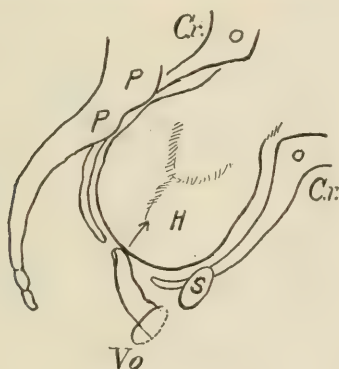


FIG. 6.—The child's head (H) is wedged in a rachitic pelvis between double promontory (P P) and symphysis pubis (S). The head is also grasped by the contraction ring (Cr.) Two fingers are seen below disengaging the head by pushing it up through the vaginal outlet (Vo.) in the direction of the arrow.

looking like a sac filled with dark fluid. The operator must at once break this membrane, and, with the knife guided by the index finger in utero, cut from within outward, dividing the whole thickness of the uterine wall from one end of the incision to the other.

XII. *Delivery of the Child.*—As the assistant keeps the abdominal walls closely applied to the uterus, while the waters are gushing out the operator seizes the breech, or one or both feet, preferably keeping the child's back in front, and then slowly but steadily extracts the child. If by mistake an arm is grasped, it must be dropped and a leg sought for.

If the placenta should lie in the line of the incision (pla-

centa previa cesareana), run the fingers between it and the uterine wall, find its margin and break through the membranes there, and grasp the feet and extract as before.

XIII. *Delivery of the Head.*—The child's head is frequently grasped by the lower uterine segment, delaying its delivery very materially. It can best be freed by hooking the fingers of one hand into the maxillary fossa, and flexing the head until it presents its smallest diameters to the superior strait and contracted lower uterine segment, while the other hand is occupied in making traction on the child's legs in the axis of the uterus. If this does not at once succeed in releasing the head, use the pelvic hand to straddle the neck and shoulders, both assisting in the traction efforts and pushing

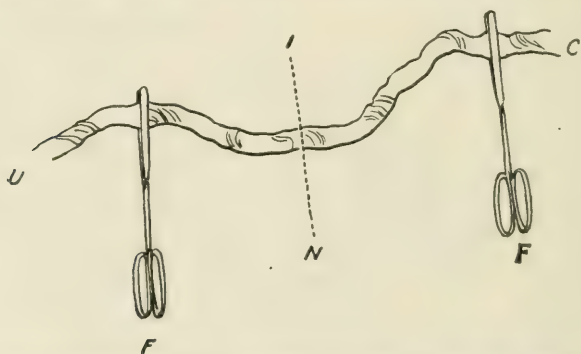


FIG. 7.—Clamping the cord (U C) with artery forceps (F F), and cutting between I N instead of ligating.

down the occiput with a finger in the effort to secure flexion at the same time. A head incarcerated in the pelvis should be recognized before the operation, when an assistant prepares to push it through the vagina, if delivery by the other methods proves at all difficult.

XIV. *Double Clamping and Cutting the Cord.*—Clamp the cord between two artery forceps and cut between them, handing the child at once to an assistant fully competent to resuscitate an asphyxiated child.

XV. *Removal of the Fetal Envelopes.*—If the placenta does not already lie loose in the uterus, it may be grasped in the full hand and squeezed like a sponge toward its centre; thus separating it while the membranes peel off as it is slowly withdrawn from the uterus.

XVI. *Uterine Hemorrhage*.—If the flow of blood from the uterine incision is at any time excessive, the assistant should grasp the neck of the uterus in both hands, and, by making firm pressure, control the hemorrhage until the deep sutures are introduced.

XVII. *Delivery of the Uterus from the Abdomen*.—The operator may next raise the body of the uterus entirely out of the abdominal cavity, resting it upon six or eight thicknesses of antiseptic gauze wrung out of hot water (120° F.) The gauze occludes the abdominal wound above, and retains the intestines, as well as catching any further bloody discharge from the uterus.

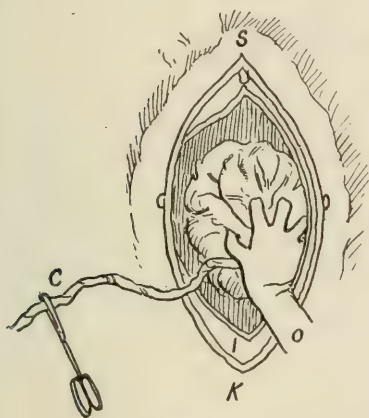


FIG. 8.

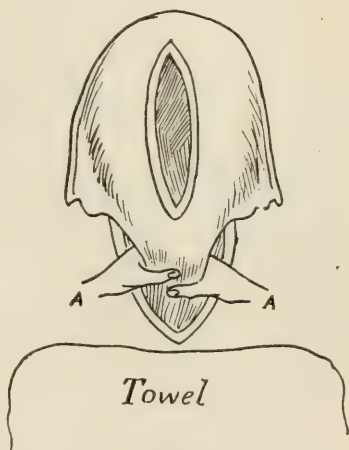


FIG. 9.

FIG. 8.—The right hand of the operator grasps the placenta, and squeezing it together separates and gradually removes it. S K, the skin incision; U I, the uterine incision; C, the cord.

FIG. 9.—Hemorrhage from the uterus controlled by firm pressure on the cervical region, by the hands of the assistant (A A).

With thin abdominal walls and a narrow conjugate, the uterus often lies so near the surface and so conveniently disposed that it is entirely unnecessary to lift it out of the abdomen. It is then sutured *in situ*.

XVIII. *Uterine Suture*.—The sutures are disposed in two layers, the deep and the superficial. (a) Deep silk sutures closing the uterine wound are first introduced, numbering two or three to the inch, or one to twelve millimetres. Each deep suture is entered about one centimetre from the margin of the

incision (at A), penetrates the whole thickness of the uterine wall down to the decidua (at B); it is then entered on the incised surface of the opposite side at the decidual margin (at C), and brought out on the peritoneal surface of the uterus at a point corresponding to the point of entrance (at I). If there is any active bleeding, sutures may be tied as they are

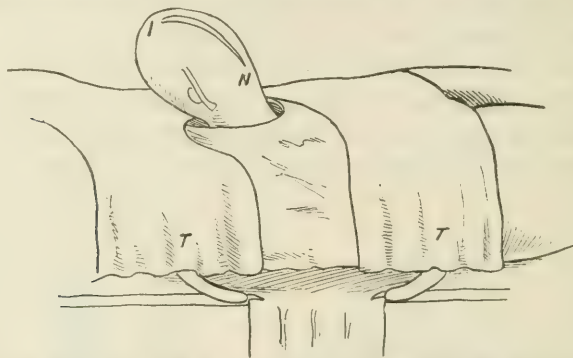


FIG. 10.—Side view of the patient. The uterus brought out of the abdominal incision and laid on a towel (T) while its incision (I N) is being sewed up.

introduced, until the vessel is controlled. If there is no active bleeding, they may be safely left untied until the last suture has been introduced. Tie each suture with just enough firmness to bring the cut surfaces snugly together and to blanch a small area of the uterine tissue in the immediate

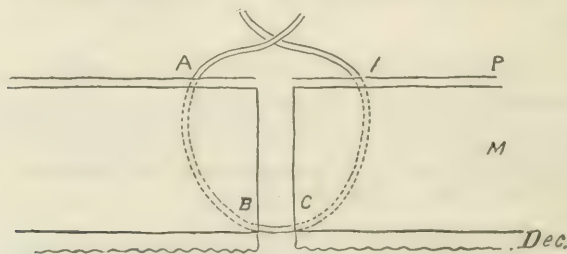


FIG. 11.—The deep suture inserted. P, peritoneum; M, muscularis; Dec, decidua.

neighborhood of the suture; never tie very tightly, and above all things avoid a slack tie.

A uterine wound reaching into the lower segment of the uterus must be approximated with especial care on account of the thin lax tissue and a great venous sinus there. From eight to twelve deep sutures will commonly be needed to close the whole wound.

(b) *Superficial Sero-serous Sutures*.—With a fine needle and about twice as many interrupted sutures of fine silk, the serosa and underlying muscularis just outside the lines of puncture of the deep sutures are slid over the top of the incision thus closed, completely hiding the line of deep sutures.

(c) Half-deep sutures, passed between each of the deep sutures, take the place of the sero-serous. They are introduced

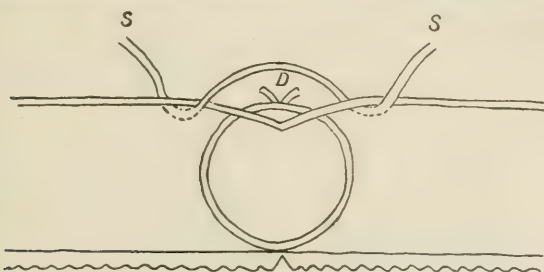


FIG. 12.—The superficial sero-serous suture (S S) introduced. When drawn up and tied, this completely covers in the deep suture (D).

after the deep sutures are tied, and sweep through both lips of the closed incision, including not more than one-fourth of the thickness of the uterine wall. By this means the approximation is made accurate and pouting between the deep sutures corrected.

XIX. *Cleansing the Abdomen previous to Closure*.—Hook

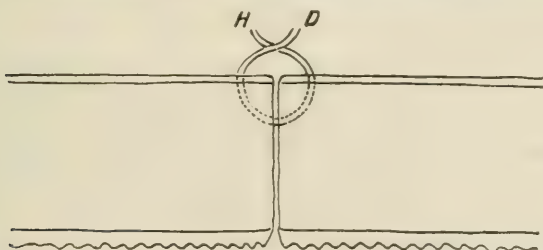


FIG. 13.—The half-deep suture (H D), insuring accurate approximation between the deep sutures.

up the lower angle of the abdominal incision with first and second fingers, and carefully sponge out the vesico-uterine pouch, the iliac fossæ, and lastly the small intestines and Douglas' cul-de-sac; the uterus is then dropped down into the pelvis. If blood and amniotic fluid have escaped into the abdomen, pour in a litre of water (108° F.) and wash the lower abdominal cavity well out.

XX. *Drawing Down the Omentum.*—If septic infection is excluded with certainty, the omentum should be drawn over the uterus, protecting it and the viscera from the abdominal incision.

If there is a possibility of septic infection, as after previous instrumental interference and prolonged labor, it is better to draw the omentum down behind the uterus, thus separating it from the small intestines and leaving it in close relation to the abdominal incision. A septic process may thus be localized and discharged through the abdominal wall, thereby saving the patient.

XXI. *Closure of the Abdominal Incision.*—Finally the abdominal cavity is closed by ten or twelve silk sutures, about twelve millimetres apart, embracing all the layers. Between each of these deep sutures superficial sutures should be passed wherever the approximation is not perfect.

THE SUBSEQUENT CARE OF THE CASE.

An accurate record of pulse, temperature, and amount of urine passed and amount of sleep should be kept.

Immediately after the operation separate the labia, wipe out the vaginal outlet, and throw in three to four drachms of the iodoform and boric acid powder (1 to 7); this keeps the discharges sweet at the only point at which they are in contact with the air.

Every time the nurse draws the urine she first wipes off the orifice of the urethra with a piece of absorbent cotton and throws a drachm of the powder into the vulvar orifice.

A pad of absorbent cotton is kept loosely applied to the vulva by a T-bandage, and changed as often as soiled, or every three hours at first.

There is no reason why the baby should not nurse the day after the delivery—in from twelve to twenty-four hours.

The abdominal sutures should all be removed on the eighth day, and a firm abdominal binder applied.

It is always a matter of interest, after emptying the uterus, to note where the lower segment is sharply defined by the formation of the prominent shelf-like contraction ring.

Before closing the abdomen measure the conjugata vera.

ERRORS TO BE AVOIDED.

I. Do not use antiseptic solutions for instruments or hands after the operation has begun; above all, do not use them in the abdominal cavity. Use pure water throughout, preferably distilled, which has been boiled a half-hour.

II. Do not turn the uterus out of the abdomen before delivering the child, unless its contents are doubtfully septic; it does no good, adding an unnecessary step and calling for a larger abdominal incision.

III. Do not cut the placental tissue, thus bleeding the child, in placenta previa cesareana.

IV. Do not waste time picking off small shreds of decidua from the inner surface of the uterus.

V. Do not do a conservative Cesarean operation when the uterus is already septic. If the uterus is infected, do a supra-vaginal amputation after Porro's method.

VI. Do not use catgut of any kind as a uterine suture. It has proven dangerous and uncertain.

VII. Never use a continuous suture in the uterus.

VIII. Do not attempt to drain the abdominal cavity; it cannot be done effectually.

IX. Do not douche out the vagina, as a matter of routine, after the operation. It must be carefully disinfected beforehand; afterwards an aseptic genital tract will need no active antiseptic régime.

X. Lastly, let all the preparations be so fully and carefully made beforehand that no time shall be lost, and each successive step shall follow its predecessor with the utmost rapidity consistent with accuracy, and the whole be completed with despatch.

I have thus endeavored to insist that a certain simple, rational technique, now shown by an abundant experience to contain all the factors of success, shall be universally adopted.

I must insist that my countrymen, in particular, shall cease making useless experiments, unwittingly repeating over and over again the errors of their predecessors.

No man has any longer a right, unless upon the basis of a large experience, to materially modify any details of this

operation, if he be unwilling to bear the imputation of unwarrantable trifling with the most sacred trusts committed to his care.

VENTRAL HERNIA: A PLEA FOR EXTRAPERITONEAL
OPERATION, WITH CASE.¹

BY

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As a text for my remarks I will take the history of the patient presented to this Society four weeks ago.

A. S., a widow, 38 years of age, came under my care February 17th, 1890. She was married at 21 and had never been pregnant. At 23 she contracted a chancre from her husband. This was followed by well-marked secondary manifestations. About this time a leucorrhea developed which lasted for fifteen years, still persisting when I first saw her. Four years previously she suffered from an inflammatory affection in the pelvis, which has troubled her more or less ever since in spite of almost constant treatment.

The patient, when I first saw her, was in a pitiful physical condition, anemic in the extreme, cachectic, and suffering from an outbreak of tertiary syphilis. An examination of the pelvic organs discovered an enlarged and retroverted uterus firmly adherent to the rectum, and flanked on either side by enlarged, convoluted, and tender tubes. Abdominal exploratory puncture (guided by combined rectal and vaginal touch) of the left tube yielded pus and established the diagnosis of pyo-salpinx.

Laparotomy, February 28th, 1890, disclosed a pyo-salpinx on either side and a uterus firmly fixed by adhesions to the rectum. Both tubes and ovaries were enucleated, tied off, and removed. In doing this the left tube ruptured and discharged about an ounce of pus into the peritoneal cavity. This was immediately washed out by free flushing with ster-

¹ Read before the New York Obstetrical Society, March 3d, 1891.

ilized water. The adhesions of the uterus to the rectum were broken up, and the fundus was brought forward, but not attached, to the anterior abdominal wall. The incision in the abdominal wall, ten centimetres in length, was closed with silkworm-gut sutures embracing the entire thickness of the parietes. No drainage.

The sutures were removed on the eighth day, and primary union was found to have been secured. Subsequently a small fistula formed at the lower end of the cicatrix, which, six weeks later, had entirely healed. Patient was discharged, May 8th, 1890, with a well-fitting abdominal supporter, perfectly, and I may here add permanently, relieved of all her former symptoms.

She was naturally of a careless disposition, and this perfect freedom from symptoms caused her to look upon the abdominal supporter as an unnecessary annoyance. She discarded all abdominal support within a few days after leaving hospital, and, as a consequence, a ventral hernia developed in the cicatrix. For the cure of this hernia she re-entered hospital December 27th, 1890.

The cicatrix, instead of forming a linear scar, was found stretched into the form of an ellipse ten centimetres long by five centimetres wide at its middle. The margins of the recti muscles had separated to the same extent, and nothing but a thin layer of attenuated scar tissue, backed by peritoneum, served to retain the intestines within this space. On coughing the hernial tumor visibly threatened to rupture its thin covering of skin and peritoneum.

Operation, December 29th, 1890. An elliptical incision was carried in the healthy skin along the border of and embracing the entire cicatrix. The cutaneous layer was carefully dissected from the peritoneal over the entire extent of the cicatrix. At one point a slight nick was made in the peritoneum which a little greater care would have served to avoid. The minute aperture was immediately closed by compression forceps, and, at the completion of denudation, by a catgut suture.

The separated margins of the recti muscles could now be distinctly felt. The original elliptical incision was deepened to the subperitoneal fat in such a manner as to pass by and

lay bare the internal margins of the recti and the fascia on either side.

The denuded internal margins of the recti were split by a longitudinal incision two centimetres deep, running the entire length of the diastasis on either side, into an anterior and a posterior-flap. The spreading of these flaps gave two broad, raw surfaces of muscle, which were brought together in the median line over the previously infolded raw peritoneal sac.

The wound was united in the following manner: Ten silkworm-gut sutures were passed on one side of the wound through skin, superficial fat, the fascial covering of the rectus, and the rectus itself, emerging in the depths of the wound near the lowest part of the deep flap formed by splitting the muscle. The sutures then traversed the tissues of the opposite side in inverse order.

Before tying the silkworm-gut sutures upon the skin, the margins of the fascia were brought together by a row of buried catgut sutures embracing the fascia and a small bite of the immediately subjacent muscle. A bundle composed of six or eight strands of silkworm gut was carried along the anterior face of the inverted peritoneal pouch, deep down behind all sutures, and brought out at either end of the wound for drainage. The usual antiseptic dressings were applied.

The silkworm sutures and drains were removed on the tenth day, when complete and firm primary union was found to have occurred.

Patient was discharged with a strong linear scar February 3d, 1891.

The literature of ventral hernia, especially that relating to the operative cure of herniæ following laparotomy, is surprisingly meagre. I exclude from consideration here the so-called epigastric herniæ, recently so ably and interestingly elucidated by O. Witzel ("Ueber den medianen Bauchbruch," *Samml. klin. Vorträge*, N. F., No. 10), as well as the subject of umbilical hernia, to which Säger¹⁷ has lately furnished a valuable contribution.

Wylie²¹ has put on record the largest number of operations for the cure of ventral hernia performed by a single operator—*i.e.*, eight—six women being operated upon, two of them

NOTE.—The small figures refer to literature at the end of the article.

requiring a second operation. In five of the six cases the herniæ were the result of laparatomies. Martin,¹² in reporting twenty-two second laparatomies performed upon the same patient, relates eight cases in which the hernia resulting from the first operation was excised at the second. None of Martin's cases, however, were undertaken for the direct and sole purpose of curing the hernia. Intra-abdominal conditions furnished the indications for each of the operations.

Billroth,⁴ Chrobak,⁴ Gerdy,⁶ Gusserow,¹² Hoffa,⁹ Maydl,¹³ Olshausen,¹² Simon,⁸ Winiwarter,⁴ each report two; Balandin,¹ Bigelow,³ Jeffremovsky,¹⁰ Mayo,¹⁴ Michael,¹⁵ Sims,¹⁸ Young,²² each one operation for the radical cure of non-strangulated ventral hernia.

The causes of ventral hernia following laparotomy are succinctly stated by Martin:¹² "Not the method of suture, but the state of nutrition, the occupation, and the tone of the tissues of the patient determine the occurrence of hernia." To these causes I would add the use of the drainage tube for longer than four or five days after laparotomy.

As to the frequency of the occurrence of hernia after laparatomies, it is difficult to obtain reliable statistics on a sufficiently large scale to make them practically valuable. Of fifty-four cases of laparotomy performed by me in which I have been able to follow the patients and to inspect the cicatrix at periods of time varying from three months to several years after operation, I have observed a diastasis of the recti in the region of the scar in four. In two of these there was no protrusion of the abdominal contents; in two a well-developed hernia existed. For statistical purposes I would, however, class all cases with well-marked diastasis of the recti muscles as hernia; my statistics, therefore, as far as I can gather them, are four herniæ out of fifty-four cases surviving laparotomy.

In two of my patients the neglect to wear an abdominal supporter after leaving hospital seemed to be the chief cause; contributory in one (the case above related) was a syphilitic cachexia, in the other the existence of pregnancy at the time of operation and its uninterrupted progress to term thereafter. In the third case the patient was summoned home before fairly convalescent, to nurse a paralyzed husband; her

exertions in lifting the heavy man may reasonably be credited with the causation of the hernia. In the fourth case I am inclined to attribute the hernia to the use of the drainage tube, as the hernial aperture corresponds in situation and size with the latter.

The prevention of ventral hernia after laparotomy follows naturally from what has just been said. It consists in avoiding the causes as far as possible, and in wearing a properly adjusted and suitable abdominal supporter for at least six months after operation.

I will not dwell upon the distressing symptoms—pains, digestive disturbances, nervous manifestations, etc.—occurring in connection with ventral hernia. The positive dangers of the condition are strangulation and rupture. Jordan¹¹ has recorded two cases, Dudley³ and Pye¹⁶ each one, and the writer has personal knowledge of one unrecorded case in the practice of a colleague, where death followed operations demanded for the relief of strangulated ventral hernia. Of recoveries following operations for this indication, Beach² and Jordan¹¹ each report an instance. Curiously enough, the only two cases of spontaneous rupture of ventral hernia which I have been able to find recorded (Wallace,¹⁹ Wood²⁰) both ended in recovery without operation. The writer knows of a third case in the practice of a gynecologist of this city in which a ventral hernia following ovariectomy ruptured about a year after operation. The eventrated intestines were replaced, the wound of exit was closed by suture, and the patient made a good recovery.

The treatment of ventral hernia may be conducted along two lines, the prothetic or palliative, and the operative for radical cure. The former seems to find its chief adherents among the French. In the perusal of the French literature, as far as accessible to me, on the subject, I have not come across a single case of operation undertaken for the radical cure of ventral hernia, and but a solitary instance of kelotomy, ending fatally, for strangulated ventral hernia.

The indications for operative treatment are given when a ventral hernia becomes strangulated; when the coverings of the hernia become ulcerated, or so attenuated that the danger of rupture is imminent; and when it is found impossible to

obtain relief by wearing a truss. Another indication, optional with the patient, is the unwillingness to wear a truss, even though it serve to retain the hernia. In operating for the relief of strangulated ventral hernia, the same principles obtain which are applicable to strangulated herniæ occurring in other parts. I do not propose to enter further upon this aspect of the subject, but shall confine myself, in my closing remarks, entirely to the operative treatment of non-strangulated ventral hernia.

Gerdy,⁶ as long ago as 1836, reported two cases of ventral hernia in which he operated successfully in the following manner: He inverted the entire hernia, skin and all, into the abdomen; sewed the skin to the margins of the opening in the abdominal wall; treated the inverted cutaneous sac with ammonia to produce adhesive inflammation; and then sutured together the margins of the opening of the inverted cutaneous sac. He obtained firm union in seven to eight days. Bigelow,³ by applying the same principle of causing adhesive inflammation of the cutaneous covering, succeeded in radically curing, without operation, a large, inflamed umbilical hernia of seven years' duration and irreducible for two months. The hernia was slowly reduced by compression with adhesive straps, and the cavity of the inverted integuments obliterated by blistering during a period of six months.

Hadlich⁵ reported two cases operated upon by Simon, in 1872 and 1876, after the following manner: A long denudation of the skin, two centimetres wide, was made on either side, over the margins of the hernial aperture. After reduction of the hernia these raw surfaces were brought together and united by three rows of sutures, the first row attaching the internal edges of the opposite denudations to each other, the second embracing the entire thickness of the approximated flaps, and the third joining the external edges over these. Simon obtained good results in both of his cases, although the second required four separate operations.

Hegar,⁷ in 1879, proposed a slight modification of Simon's operation, making the cutaneous denudation of horseshoe form. He reports one case with unsuccessful result. Jefremovsky¹⁰ reports an additional case of failure, due to want of proper care in the after-treatment. Hoffa⁹ describes two

cases operated upon by Maas; one after a modification of Simon's method, perfectly successful after two years. The second case was operated upon by excision of the sac, including peritoneum, and suture; relapse in six months. Hoffa makes the point that Simon's operation, or a modification thereof, is indicated when advanced atrophy of the structures of the abdominal wall exists; opening the peritoneum and sutures when the tissues are in approximately normal condition.

Balandin¹ attempted to improve on Simon's method by deepening his incision into the substance of the muscle on either side, instead of limiting himself to a mere denudation of the skin. He reports one case with partial success.

The balance of the cases of ventral hernia operated on for radical cure have been performed by opening the peritoneum, exsecting or trimming the peritoneum and cicatrix, and uniting the opposite margins by suture. Some operators have pierced the entire thickness of the abdominal wall with the suture, tying upon the cutaneous surface; others have united by rows of sutures, varying in number, the different layers of the abdominal walls. Michael¹⁵ used buried sutures of silver wire, the sutures embracing fascia, muscle, and peritoneum on either side. He reports one case with good result after seven months.

The principle of flap-splitting, or its equivalent, has also been applied to the operation for the radical cure of ventral hernia. The attempt of Balandin¹ in this direction has already been alluded to. Maydl¹³ in his two operations opened the sheath of the recti on their adjoining aspects, suturing the posterior layers of the sheath, the recti themselves, and the anterior sheaths, separately. Chrobak⁴ imitated Maydl in opening the sheaths, but embraced both layers of the sheath together with the muscle itself in one suture. Tait (quoted by Sanger, *Centralbl. f. Gynekol.*, 1888, page 768, and 1890, page 476) has extended the principle of flap-splitting to operations for ventral hernia, and Sanger¹⁷ himself reports a number of cases of umbilical hernia in which he employed the method.

I am a firm believer in the correctness of the principle of flap-splitting wherever and whenever it can be applied, and

made it a part of the operative technique in the case reported at the beginning of this paper.

I come now to what I consider the most important matter in connection with the operation for radical cure of ventral hernia: the performance of the operation without opening the peritoneal cavity. It was this thought which dominated the minds of operators when performing the operation of Simon or one of its modifications. But full success could only be expected exceptionally from operations which merely added another barrier of skin, as ineffectual as the first, to the exit of the hernia. Though others, no doubt, entertained the thought, Maydl,¹³ as far as I am aware, first gave expression to the possibility of separating skin and peritoneum, and of closing the hernia over the latter, but speaks with dread of the difficulty of the procedure.

Polk (AM. JOUR. OBST., 1887, p. 53), in the discussion following the reading of Wylie's paper²¹ before this Society, said: "It ought to be possible to unite the fascia without opening the peritoneal cavity."

To Chrobak,⁴ however, seems to belong the credit of first having made a systematic attempt to carry out the idea of dissecting the cutaneous from the peritoneal layer of the cicatrix, and thus to avoid opening the peritoneal cavity. It is true he did not succeed, but punched the peritoneum full of holes in its middle, and found the separation especially troublesome at the lower end of the scar. He resolved at the time never to attempt it again. His second case, the only one he has since reported, was not adapted to the procedure, the immense extent of the hernia—from sternum to pubis—forming the contra-indication.

The only other case in which an attempt appears to have been made to denude without opening the peritoneum is that of Young.²² The account of the operation, however, is not very clear. "He (Young) separated the attachments to the point of escape, which proved to be the umbilicus. The sac was evacuated and found to be filled with an accumulation of fat. As it was impossible to return this mass into the cavity through the original opening, the speaker concluded to distend the sac and remove the mass. A great deal of hemorrhage followed." The patient died on the fifth day of ether intoxica-

tion, in the opinion of Dr. Young; of pyemia due to minute septic emboli, according to Dr. Walker, who witnessed the operation.

As far as I can ascertain, the case reported at the beginning of this paper is the first one on record in which an operation for the radical cure of ventral hernia was performed by dissecting the cutaneous from the peritoneal layer of the hernial sac, practically without opening the peritoneum, inverting the peritoneal pouch, and bringing together over it the separated margins of the recti muscles, fascia, and skin.

The main object in writing this paper is to advocate the adoption of this method, as a general rule of practice, whenever practicable. The only contra-indications that occur to me at present are ulcerations, excessive size, or extreme thinness of the hernial sac. Whenever these conditions obtain it is better to cut out the entire cicatrix, peritoneum included.

The advantages of the extraperitoneal method are several. First, and most apparent, it takes the operation out of the category of laparatomies, thus avoiding the dangers and uncertainties of the latter. In the next place, the inverted peritoneum serves to strengthen the new cicatrix by becoming attached to and thickening its internal aspect, in the same way that the inverted and folded sac is utilized in MacEwen's operation for the radical cure of inguinal hernia. A third advantage is afforded in the not infrequent cases of non-strangulated ventral hernia with adhesions of the contents to each other and to the sac wall. The tedious and time-consuming separation of the viscera from each other and from the sac wall can be avoided by reducing the hernia *en bloc* without opening the sac. Sims¹⁷ reported to this Society in 1886 an operation for ventral hernia in which he found a hernial ring ten inches in circumference; within the sac was a mass of intestine that had become firmly matted together, so that it was necessary to tear it away. The operation lasted four hours and seventeen minutes, as many as one hundred and fifty bleeding points being tied. A number of similar cases are on record. I see no good reason why the hernia may not be reduced *en masse* without opening the sac, provided the contents of the latter are not strangulated, and thus render

unnecessary the dangerous and tedious separation of visceral adhesions.

In conclusion I would call the attention of those who may feel inclined to adopt the procedure in practice to the advisability, not to say necessity, of draining the space between the inverted peritoneum and the posterior sheath of the recti muscles. Maydl¹³ has already laid stress upon this point. In my case I drained the subperitoneal space by six or eight strands of silkworm gut united in a bundle and emerging at either angle of the wound. A considerable quantity of serum was thus drained off which, if retained, might have undergone undesirable changes and interfered with primary union.

LITERATURE.

1. BALANDIN, J., Transactions of Tenth International Medical Congress. (Not yet issued.) Abstract in Centralblatt f. Gynäk., 1890; Bericht ü. die Verh. d. X. internat. Kongresses, p. 5.
2. BEACH, W. P., Strangulated ventral hernia. Medical Record, New York, 1882, xxii., 655.
3. BIGELOW, H. J., Boston Med. and Surg. Journal, 1882, cvi., 10.
4. CHROBAK, R., Ueber die operative Heilung der Diastase der Bauchwand. Int. klin. Rundschau, Oct. 30th, 1887, 1401.
5. DUDLEY, A. P., Operation for strangulated ventral hernia in a woman 90 years of age. AM. JOUR. OBST., 1890, xxiii., 528.
6. GERDY, Zur Radikaloperation der Bauchbrüche. Schmidt's Jahrbucher, 1836.
7. HEGAR und KALTENBACH, Operative Gynäkologie, 379.
8. HADLICH, Archiv f. klin. Chirurgie, Bd. xx., 568.
9. HOFFA, A., Zur operativen Behandlung grosser Ventralhernien. München Med. Wochenschr., 1887, xxxiv., 133.
10. JEFFREMOVSKY, Centralbl. f. Chirurgie, 1882, 379.
11. JORDAN, F., A note on ventral hernia. Bermingh. Med. Rev., 1883, xiii., 72.
12. MARTIN, A., Zeitschr. f. Geb. u. Gynäk., 1888, xv., 239 u. 287.
13. MAYDL, C., Ueber eine neue Methode der Radikaloperationen bei Herniæ ventrales. Wiener Mediz. Presse, 1886, Oct. 3d, 1298.
14. MAYO, W. W. and W. J., Successful operation for large ventral hernia. Northwest. Lancet, St. Paul, 1888, viii., 116.
15. MICHAEL, J. E., Ventral hernia successfully treated by operation; with a suggestion as to the method of operating. Trans. Am. Surg. Assoc., Phila., 1886, v., 227.
16. PYE, W., London Lancet, 1880, i., 90.
17. SÄNGER, M., Zur Radikaloperation grosser, nicht eingeklemmter Nabelbrüche. Centralbl. f. Gynäk., 1890, No. 27, 473.
18. SIMS, H. MARION, AM. JOUR. OBST., 1886, 272.
19. WALLACE, Ind. Med. Gaz., Calcutta, 1881, xvi., 340.

20. WOOD, W. A., Notes on a case of ventral hernia. *Austral. Med. Jour.*, Melbourne, 1890, n. s., xii., 356.
21. WYLIE, W. GILL, Ventral hernia caused by laparatomy. *AM. JOUR. OBST.*, 1887, p. 25.
22. YOUNG, D. S., Ventral hernia. *Cincinnati Lancet and Clinic*, 1882, n. s., ix., 5.

REMOVAL OF THE UTERINE APPENDAGES IN A PATIENT DEFORMED BY SPINAL CURVATURE FROM CARIES OF THE VERTEBRÆ.

BY

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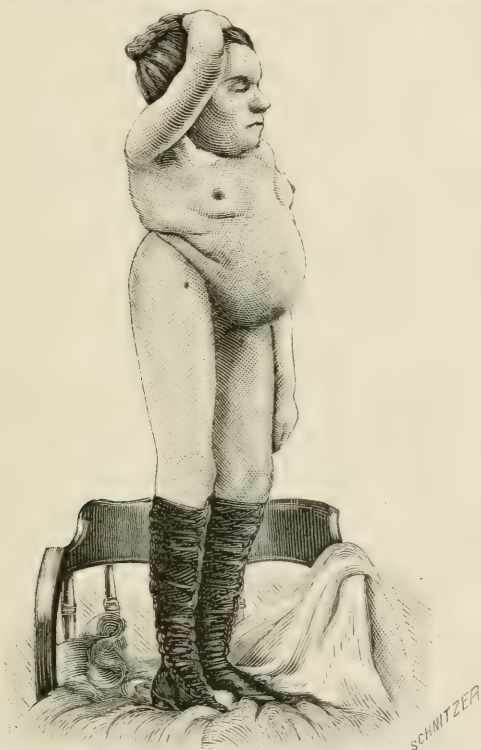
(With one illustration.)

A. V., age 29, entered my service at the Free Hospital for Women in November, 1890. She had been seen by Dr. W. H. Baker some months previously, in consultation with her physician, Dr. E. D. Hooker, of Arlington, by whom the gynecological treatment at that time advised had been thoroughly and skilfully carried out, with no improvement in her symptoms.

Menstruation, which appeared at the age of 21, had always been so painful that the patient was confined to bed for a week. Following a severe nervous shock in 1887 (four years previously) menstruation had ceased for three months, at which time also she had an attack of inflammation, so-called, accompanied by leucorrhea, bearing-down pains, inability to walk or stand, sharp tearing pain over both the ovarian regions, no especial sensitiveness over the abdomen unless the pressure was very decided. She was in bed at this time for five months. After recovery from this illness she was fairly comfortable, with the exception of the menstrual week and occasional slight returns of this condition of inflammation, as she called it, until July, 1890, when the symptoms again returned in all their severity. During this attack the abdomen

became very sensitive, and to the other symptoms was added constant burning pain referred to the ovarian regions. There had been no palliation of her sufferings, and the patient was becoming addicted to the use of opium and other sedatives. She had been bedridden for seven months.

The vaginal examination revealed an infantile vagina and uterus. In the post-uterine space could be felt both ovaries,



prolapsed, enlarged, and tender, the right ovary much larger and more dependent. Attempts at replacement or treatment of the ovaries caused too great pain to render such treatment practicable.

Laparotomy was performed December 5th. Patient's general health very poor, requiring stimulants constantly. Pulse 120 and weak.

The services of an assistant were required to hold the abdomen upon the chest, so that an incision could be made below the umbilicus.

There were no especial difficulties encountered during the operation, but the position of the abdominal organs was interesting. The right kidney lay directly under the incision, against the right sacro-iliac synchondrosis, partly above the brim of the true pelvis and partly below. This organ was enlarged at least one-half. The left kidney was not felt. The uterus could be barely touched, but neither ovary could be reached until raised by an assistant. The bladder was entirely above the true pelvis. The peritoneum was thickened, and showed evidences of chronic peritonitis. The adhesions binding the tubes and ovaries were ruptured without difficulty, permitting the removal of the right ovary, which contained several cysts. The largest, the size of a walnut, was external to the substance of the ovary, and was evidently the beginning of an ovarian cyst. The left ovary was but little enlarged. Both tubes were healthy, but were removed to insure the cessation of menstruation. The convalescence from the operation was entirely uneventful.

The interest attached to the case lies, in great part, in the deformity and misplacement of the various organs, caused by the telescoping and curving of the vertebral column.

There were two lateral and one antero-posterior curves. The head was sunken between the shoulders, and the chest protruded in the usual manner. The thoracic organs were very considerably displaced, but not of special interest in this connection. The abdomen—overhanging the pubes, lying against the thighs, extending, when the patient was standing, nearly one-third of the distance to the knees—contained nearly all the intestines and the bladder. The umbilicus was at the most dependent portion of the abdomen. The ribs came down to the crest of the ilium.

In comparison with a fairly normal woman of about the same age and probable development, similar measurements show :

	Normal.	Patient.
Weight.....	110 lbs.	57 lbs.
Height.....	62 in.	42½ in.
Distance anterior superior spine of ilium to axilla...	{ R. 14 " 5 "	{ L. 14 " 5½ "
Distance anterior superior spine of ilium to inner malleolus.....	{ R. 32 " 24½ "	{ L. 32½ " 23½ "

	Normal.	Patient.
Distance anterior superior spine of ilium to great toe.....	{ R. 34 in. L. 33½ "	28 in. 29 "
Distance umbilicus to great toe... ..	{ R. 38½ " L. 38 "	25 " 26 "
" " " ensiform cartilage.....	3¾ "	6 "
" " " pubic symphysis.....	5¼ "	3 "
" " " anterior superior spines of ilium.	{ R. 5¼ " L. 5½ "	6 " 6½ "
Girth at umbilical level.....		30¼ "
Distance between anterior superior spines of ilium.		7¾ "
" " crests.....		8½ "
" " pubes and coccyx.....		3½ "
Girth of chest around breasts.....	38 "	30 "
Size and shape of head... ..		Normal.

In brief, the relative disproportions were these: Weight, about one-half; height, two-thirds, of which height the trunk is only about twelve per cent instead of about twenty-two per cent; the umbilicus was twice as far from the ensiform cartilage, and about one-half the distance from the pubes, and at least eight inches below its normal level.

The subsequent history of the case has been one of interest as regards the improvement in the patient's condition. She is able to be on her feet, to go up and down-stairs, and is practically as well as she has ever been in her life.

The report of the pathologist of the hospital, Dr. W. F. Whitney, was that, in addition to the ovarian cysts, there was also cicatricial hardening of both ovaries.

CASE OF THREATENED MISCARRIAGE; THIRD TIME; DELIVERED AT TERM UNDER CHLORAL.

BY

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Mrs. —, age 23, married two years. Admitted to the Sanatorium March 8th, 1889, for treatment to prevent threatened miscarriage.

History.—Menstruation began at 16, was always regular, though small in amount, continuing four or five days and attended with little or no pain.

She first became pregnant in August, 1887. There were no unusual symptoms till the evening of November 23d, when pains began and continued until the evening of the following day, when she miscarried. During the day upon the evening of which her pains began, she had been almost the entire time in a room where her husband was engaged in painting the woodwork, and she attributed her miscarriage to that fact. Her recovery was speedy and uneventful.

In the following year, 1888, she became pregnant at the same time as upon the former occasion (in August), and again miscarried in November, at the end of the third month. At this time she had been having pains for several days, following her exertions in attending upon a house full of company, when she did all the work and was so tired as to be nearly exhausted. The pains began upon the next day, and her physician, by the use of morphia, succeeded in stopping them for a day or two, but they then returned and continued until her miscarriage. As in the first instance, she made a good recovery.

When admitted to my house, March 7th, she had been suffering for two days from severe pain in the back low down across the hips; had been abed most of that time and using morphia to relieve the pain and induce sleep. She was in an exceedingly nervous and excited condition. Her last menstruation had occurred December 24th to 28th, and she was fully convinced that she had again to experience the great disappointment attendant upon miscarriage.

She was quieted by bromides, and the following day an examination showed a relaxed condition of the vagina; a prolapsus of the uterus to the second degree; the vagina dilated by a large-size Hodge's retroversion pessary, which had been inserted some ten days before and had become displaced to the left; and the cervix, with an ulcerated surface as large as a cent. resting against it. The pessary was at once removed. There was considerable secretion of a muco-purulent character, and the brushing of the ulcerated surface with a pledget of cotton saturated with Dobell's solution provoked a considerable oozing of blood.

To remedy the pain a tampon medicated with belladonna and iodoform (fluid extract belladonnæ, pulv. iodoformi ãã gr. xx.,

vaseline $\frac{3}{4}$ i.) was placed posteriorly, and the packing of the vagina completed with others dipped in solutio boroglyceridis, liquoris bismuthi et hydrastiae āā 3 ij., aquæ $\frac{3}{4}$ iv.). She slept soundly all night and had scarcely any pain the next morning when the packing was removed. There seemed to be less congestion and the hypersensitiveness was diminished. The packing of the vagina for the support of the uterus seemed to produce some pain in the back, so that a small tampon medicated with belladonna and iodoform was placed posteriorly, and a large one, saturated with the boroglyceride solution, was placed against the ulcerated cervix, while the patient was kept in bed. Upon the 11th, 12th, and 13th she was allowed to be dressed, but remained in a recumbent position nearly all the time, and had but little if any pain.

The treatment was continued daily and the congestion gradually disappeared, the pain grew less, and sleep was more natural.

Upon the 13th the cervical ulceration was treated with a solution of nitrate of silver (gr. xx. to $\frac{3}{4}$ i.) and an insufflation of tannic and boric acid, followed by tampons as before. The improvement continued under this treatment until the 20th, when, on account of the near approach to the time when she expected to miscarry (the 24th), I decided to withhold any treatment that could have any tendency towards an excitation of the uterus, and simply placed small pledgets of cotton, saturated with the boroglyceride solution, against the ulcerated surface of the cervix, and renewed them two or three times a day.

She was made as comfortable as possible in bed, where she remained until April 1st, when she was up for the first time.

The patient was of an exceedingly nervous temperament, and her condition of excitement increased until the arrival of the day upon which she knew she should miscarry, when she became quite hysterical. The bromides of sodium and potassium were given in small (āā gr. v.) doses, which proved sufficient to relieve her condition somewhat, and she was assured that everything seemed favorable to the continuance of her pregnancy. The nervous phenomena gradually passed off, and at the end of ten days she was up and about the house, and feeling greatly relieved upon having passed what she

rightly considered to be the crisis, and much encouraged to believe she might carry her child to term.

At the end of the fourth month of her pregnancy she was again kept very quiet, and for nearly a week was encouraged to remain in a recumbent position most of the time. The nervous manifestations of the previous month returned, attended by some pelvic pain, but were less prominent and were quite readily controlled by the bromides.

The ulceration of the cervix gradually healed under treatment, and nothing of moment occurred until June 23d, when she complained that there was some considerable swelling of her hands and feet and a most intolerable itching.

She was passing her urine, which was of a light color, more frequently, and did not think she passed as much as usual; it was also attended by considerable irritation about the vulva.

Urinalysis at this time showed: Quantity for twenty-four hours, thirty ounces; acid; specific gravity, 1.022; yellow; small amount of precipitate upon boiling, which disappeared upon addition of nitric acid; no albumin.

The vulva was bathed with Dobell's solution, the irritated portions brushed over with a solution of nitrate of silver (1 to 16) and dusted with boric acid. It required no further treatment.

The urticaria of the hands and feet was treated by bathing with a solution of bicarbonate of soda, which relieved the itching as long as it was continued, but as soon as the feet were dry and warm the itching would return.

Small doses of calomel (one-tenth of a grain) were used at first, for its action upon the kidneys, to which, as there was also constipation, and especially for its effect in urticaria, ipecac was added, and a tablet containing one-eighth of a grain of each was used, with good effect upon the bowels, but only a slight increase in the secretion of the urine, which still continued to be passed in small quantities quite frequently, and with scarcely any effect upon the urticaria.

The itching became so severe that it was almost unendurable unless the feet were kept in the alkaline solution and other applications were made; lead and opium wash was no more lasting in its effect. A two-per-cent solution of carbolic acid did better than the others, but after using it for two

days a smoky color to the urine indicated that it was being absorbed, and it was at once discontinued. An application of nitrate of silver solution (1 to 16) was also tried, but with no better effect. The last thing used was compound tincture of benzoin, with which both hands and feet were painted; this seemed to have a more lasting effect than anything before used.

Being convinced that the urticaria was in great measure due to the inactivity of the kidneys, to increase their action normal liquid digitalis was used, beginning with two-drop doses, increasing to five drops t. d. She also took a seidlitz powder the first thing each morning, and potassium citrate gr. x.; b. d.

July 8th, urinalysis showed: Quantity for twenty-four hours, sixty-four ounces; light greenish yellow; slightly alkaline; specific gravity, 1.012; rather cloudy; no albumin; treatment continued: seidlitz powder each morning; digitalis gtt. v., and potassium citrate gr. x., b. d.

An enlargement of the thyroid gland was noticed by the patient at this time, the left lobe being the more affected, and inquiry elicited the fact of a similar condition occurring in the patient's mother during her first pregnancy and becoming permanent.

The swelling and itching of feet, etc., gradually subsided after the quantity of urine increased, and the digitalis was discontinued July 12th, and tincture of the chloride of iron was substituted in doses of eight drops t. d.; the citrate of potassium was continued (gr. x., b. d.), and seven and a half grains each of the bromides of sodium and potassium were given at night. The citrate and bromides were gradually reduced and finally discontinued, but the iron was continued throughout gestation, proving to act satisfactorily upon the kidneys, and also upon the heart, which was subject to palpitation and gave a mitral murmur, seemingly of an anemic character, during the early months of gestation; but soon after its use was begun these manifestations subsided, and, the last two months, were seldom shown.

From August 16th to 30th, against my advice, she was isolated to care for her husband, who was confined to his bed by an attack of diphtheria. She nursed him throughout, attend-

ing upon him day and night, and being upon her feet a great portion of the time. The only inconvenience she experienced was some pain, suprapubic, which passed away upon lying down for a while.

Under date of September 28th I have noted: Has been quite comfortable during the past month, and all symptoms of an unpleasant character have abated. Urinalysis: Quantity in twenty-four hours, two quarts; alkaline; 1.015; light, opalescent; no albumin. She drank water freely, and during the last four months of her pregnancy the daily average of urine passed was about two quarts.

Frequent and painful micturition, with suprapubic pains, premonitory of the approaching labor, began upon October 2d. An examination was made, and the fetal heart, 132 pulsations a minute (male?), was most plainly heard below and to the left of the umbilicus. The maternal pulse was: sitting, 82; lying, 80. The cervix was soft and apparently dilatable; the head was presenting, occiput anterior and to the left.

Uterine pains began upon the evening of the 4th of October, and continued, with greater or less frequency, until late in the forenoon of the 5th before they began to be expulsive in character. She had all along dreaded these pains, saying that she could not bear pain, and must have something to take to prevent her from feeling them. She was much opposed to both chloroform and ether, claiming that they did not agree with her, and that she knew she could not take them because her mother couldn't. I had decided, therefore, to use chloral, and began, at 11:20 A.M., giving fifteen-grain doses. The os at this time was about the size of a twenty-five-cent piece. A second dose was given at 1, third at 1:30, and fourth at 2 P.M. The only effect produced by the drachm that had been given was to relieve the pains of the uterine contractions, and thus encourage the use of the voluntary muscles of expulsion, which until this time she had failed to do. She was now willing to hold her breath at the onset of a pain and to assist in bearing down. Up to this time there had been no perceptible advancement of the presenting part, but from this time on progress was gradual and continuing. From 2 until 5 o'clock no chloral was given, but it was resumed at that hour, because, as its influence passed away,

an hysterical condition came on which threatened to make the patient entirely unmanageable, so that fifteen grains were given at 5 and again at 6 o'clock, the patient quieting down and resting, even falling asleep between the pains, but rousing and "helping" when the pains appeared, which were perhaps a little less frequent but of greater force. The seventh dose was given at 7:40, and I had thought of not giving any more; but a few whiffs of chloroform which were given as the chloral influence was passing away were greeted with such repugnance by the patient that I again resumed the chloral, with the happiest effect, giving the eighth dose at 9, and the ninth and last at 10:40. The child (male) was born at 11:40, after which one drachm of Squibb's fluid extract of ergot was given, and at 12:30 the placenta and membranes were delivered. After the toilet was completed at 1 o'clock, at which time the pulse was 108 and respiration 38, the patient went quietly to sleep and slept till about 8 o'clock, when she awoke and wanted to go down to breakfast, saying she never felt better. At 9 o'clock her pulse was 121 and temperature 98.8° ; the evening temperature rose to 99° , when the pulse was 104, but returned to normal the next day, and the patient made an uninterrupted recovery.

Remarks.—(a) When it has been determined to use a pessary in a given case, the greatest care should be exercised in its selection. An ill-fitting pessary will do more harm than good, and especially is this the case with a pregnant uterus, which, from its condition of congestion, is more liable to take on a morbid action from such irritation.

(b) In cases of repeated miscarriage, enforced quiet in a recumbent position, with the removal of all exciting or irritating influences, is the first indication to be met, and in many cases is all that is necessary. To insure this the physician must have the patient under immediate supervision and thus secure complete control.

(c) The use of chloral as an anesthetic in parturition is especially of value, not only as a preliminary to the use of chloroform, but where, for any reason, chloroform and ether are contra-indicated. Fifteen-grain doses in a wineglass of water can be given every half-hour until the desired effects are produced, and then repeated as indicated. In affections of the

heart it seems, in my experience, to be better borne than either chloroform or ether, and I have never noticed any deleterious effects from its use in any case.

THE THERAPEUTIC VALUE OF EXPLORATORY
LAPARATOMY, WITH THE REPORT OF
THREE CASES.¹

BY

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THE following cases illustrate different degrees of improvement in widely varying conditions, and are reported for the purpose of introducing the subject for discussion rather than of offering any theory in explanation of the results. It is a well-established fact that manipulation of the abdominal and pelvic organs, and exposure of the peritoneum to the air, as are done during exploratory laparotomy, have been followed by recovery in some instances and improvement in many others. But why a thickened and sensitive peritoneum should become normal, or an enlargement or tumor of any organ disappear, or a tubercular peritonitis subside, are questions which, in the present state of our knowledge, cannot be satisfactorily answered. The fact remains, however, and favorable results will doubtless continue to be reported as the operation is more frequently resorted to for diagnostic purposes in cases in which, for any reason, further operative procedures are precluded.

The privilege of presenting Cases I. and II. is due to the courtesy of Dr. Lee and Dr. Thomas, respectively.

CASE I., operated on December 8th, 1887, suffered from a marked abdominal dropsy. She was tapped once after the operation, and under medical treatment recovered entirely. Her history is as follows: Age 26; married five years; had a four months' miscarriage five months ago. Family history shows no hereditary disease. Personal history good, as she recalls but one spell of sickness, due to malaria, prior to the mis-

¹ Read before the New York Obstetrical Society, February 17th, 1891.

carriage mentioned. Although she was up in a fortnight after the miscarriage, she walked with difficulty and did not regain her usual strength; also noticed that she passed less urine than formerly. Six weeks ago she had severe pain in the region of the umbilicus, and at the same time observed slight abdominal fulness. The pain became general throughout the abdomen, and extended into the lower extremities as the swelling increased; the latter was always confined to the abdomen. The amount of urine is decreased, its specific gravity slightly increased, and it contains hyaline casts and a trace of albumin.

The operation disclosed a thickened and hyperemic peritoneum, but no adhesions. After evacuation of the fluid a soft-rubber drainage tube was inserted and the wound closed. The tube was removed in one week, and the sinus healed in six weeks. The abdominal pain did not return. The swelling soon returned, and three weeks after the operation she was tapped. After the tapping it again returned to a slight extent; but under a tonic and diuretic treatment she rapidly recovered her health, and six months later became pregnant and was delivered at term of a well-developed child. I should have stated that chloroform was given for the operation.

Although the probable renal origin of the dropsy was recognized, to make positive the presence or absence of any abdominal complication the exploratory incision was resorted to. It cannot be regarded as a measure much more dangerous than tapping in such a case, and offers, in addition to the correction or confirmation of a diagnosis, the opportunity for drainage if deemed necessary. The comfort afforded the patient, which immediately followed the operation and continued when the swelling had to a considerable extent returned, was more marked than generally follows evacuation by tapping.

CASE II., operated on May 4th, 1888, also suffered from marked abdominal dropsy. She was tapped three times after the operation, and under medical treatment became perfectly well. Her history is as follows: Age 23; single; gives a personal history particularly free from disease until the beginning of the present illness. Family history also good. One year ago was thrown from a horse, and, while she sustained no serious injury, thinks she was not as well afterwards.

Three months ago she fell down-stairs, and in a few days noticed an abdominal fulness, which rapidly increased; she has also had pain on the right side since the last accident. Amount of urine decreased, but otherwise normal.

Exploratory laparotomy under ether showed tubercular peritonitis to be the cause of the dropsy. The mesenteric glands were enlarged, and the peritoneum was sparsely studded with tubercular elevations. These were also found scattered over the liver in such a manner as to lead to its comparison to a carcinomatous liver. After the fluid was evacuated the incision was closed with catgut. The dropsy returned and required tapping once a month, in the meantime the patient taking tonics in the form of iron, arsenic, etc. Four months after the operation she was married, and afterwards became pregnant, but miscarried between the second and third months.

In König's collection of one hundred and thirty-one cases reported at the last International Medical Congress, one hundred and seven were discharged improved. Of these, twenty-three were merely improved, while eighty-four were cured. Limiting the cure to a test of two years reduces the number to thirty cases, fourteen of which were well at the end of three years.

Improvement seems to be so uniform in cases of this class that the report of a single case serves only to add favorable evidence in a question that is already decided.

CASE III. was operated on November 8th, 1889. She suffered from recurrent attacks of pelvic peritonitis. The ovaries were cystic and adherent. The incision was closed and the patient made a perfect, symptomatic recovery, which continues at the present time.

Her history is as follows: Age 27; married twelve years; one child eleven years ago, delivery instrumental; three years later had a miscarriage at sixth week; four years ago had an attack of peritonitis which confined her to the bed for three months. One year ago had a unilateral laceration of the cervix successfully operated on, but since the operation she has been compelled to remain in bed during and for a week after menstruation, with dysmenorrhea and symptoms of pelvic peritonitis.

The dysmenorrhea has existed since the attack of peritonitis four years ago, but the accompanying localized peritonitis is of more recent origin, more particularly since the operation on the cervix.

Six months ago she developed severer symptoms than usual, when she came under my direct care, and was in bed eight weeks with pelvic pain, tympanites, and a temperature from two to three degrees above normal. As soon as she was in a fair condition to undergo the operation I opened the abdominal cavity. The omentum was adherent to the brim of the pelvis, and had to be detached before the uterus and ovaries could be felt. The latter were easily found, occupying the pelvic space on either side of the uterus, both cystic and both firmly attached to the pelvic walls. The cysts, which seemed to have destroyed all ovarian tissue, were about an inch and a half in diameter, and the adhesions binding them down were so firm and strong that they resisted all ordinary efforts to break them. Consequently I abandoned the operation at this stage and closed the incision; but it was with the idea of tapping each cyst per vaginam at a later date, and, if necessary—and I supposed it would be—of doing a second laparotomy when the patient was prepared to incur the increased risk. She made a quick recovery from the operation, and her improvement continued until, after a few months, she considered herself a well woman, and has since been acting the part of one—riding, walking, dancing, travelling, etc. The adhesions have softened to a great extent, and she menstruates regularly, but it is scant and painless.

CANCER OF THE RECTUM.¹

BY

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IN my brief experience as a surgeon it has been my fortune to number among my cases six examples of this disease in

¹ Read before the Chicago Gynecological Society, January 16th, 1891.

various stages of advancement, as follows : one, female, cancer within two inches of anus, colostomy and excision ; one, female, cancer involving anus and lower rectum, colostomy, excision ; one, female, cancer involving anus and rectum, colostomy, no excision ; one, female, cancer high in rectum, no colostomy, curettage ; one, male, Kraske's operation, colostomy (Dr. Fenger's case) ; one, male, no excision, curettage, no colostomy. With these there were no deaths as a result of the operations, though Kelsey states that the mortality for excision is thirty-three per cent.

Let me, before presenting the history of a case, call to your attention the following significant facts : In a careful inquiry—made by Cripps—into the family history of a large number of cases of cancer, the percentage of mortality by that disease was found almost identical with that of the general population by the same. In a very large proportion the disease is so situated that an infection could have been plausibly possible. Infection of husband from wife suffering from cancer of cervix has been in several instances well authenticated by competent observers. A much greater frequency exists near the sea than inland, and both Sheurlen, of Munich, and Thoma, of Heidelberg, have demonstrated the frequent presence of micro-organisms (psorosperms) which, in their opinion, have a specific relation to the causation of this disease.

In relative frequency of type, cylindrical-celled, flat-celled (epithelioma), and papillo-carcinoma stand in the order named. Allingham, who in 1886 had already reported thirty-nine cases of excision, is authority for the statement that rectal carcinoma usually runs its course in twenty-four months. He notes, however, cases ending in death in from four months to four years. His experience had been also (contrary to that usually noted) that the disease occurs more frequently in males than in females, and that its most usual site is within three inches of the anus. Cachexia appears at a very early period. The ages of greatest frequency range from 45 to 55, though it has been noted as early as the age of 6. Cancer in this location frequently escapes the observation of the general practitioner, being mistaken for hemorrhoids ; and, for this reason, too great care cannot be taken in the examination

of middle-aged people in whom there are symptoms referable to the rectum.

Treatment.—James Adams urges that in every case there should be made a colostomy, saying: "In cases of any but the slightest degree the operation of removal may prove incomplete and the disease speedily return; . . . after complete extirpation of the lower end of the rectum the subsequent contraction is often very great, and even at times intractable, and in any case the healing of the wound will be much expedited and the chances of local recurrence diminished by diverting the course of the fecal matter."

Allingham justly condemns the making of a colostomy in every case of cancer of the rectum, stating that "often neither pain nor obstruction will ensue in months, or they may never occur and the patient may die from some other malady. Of course if a surgeon at once persuades all his patients who have malignant growths in their rectum to submit to colostomy under the promise that life will be prolonged or suffering averted, he will have many cases to report and very good but very valueless statistics."

There are four factors which make this operation justifiable: First, because the mortality of rectal excision can be immensely reduced by diverting the fecal matter from the site of the excision. Second, because there are, in some of the cases, excruciating pains, caused by the passage of fecal matter over the ulcerating carcinoma, which can be relieved by a colostomy, winning at the same time for the surgeon the gratitude of the patient. Third, because in those cases in which the disease extends higher than the lower three inches, there is sure to be, sooner or later, a stenosis. This Jessop has demonstrated at the late meeting of the British Medical Association. He calls attention to the fact that where the disease is low down in the rectum complete obstruction seldom occurs, and that the opposite is true where the disease is high up. The reasons for this difference are to be found in the anatomy of the parts themselves; for while the rectum, as it approaches the outlet, becomes more closely connected to the sacrum and pelvic wall, in its superior portion it is comparatively free. Thus the contractile action of the colon is exerted with effect in forcing its contents through the con-

tracted ring when that ring is fixed and immovable. But when the narrow portion is freely movable, as it is when situated in the upper portion of the rectum, the efforts of the bowel above succeed only in invaginating or otherwise displacing the growth, and fail altogether to effect any onward movement of the contents (Kelsey). Fourth, it has been the experience of most operators that the cicatricial contraction which follows such an operation is often excessive and intractable, as in any of the inflammations, specific or simple, which so frequently result in a stenosis here. Allingham has found that if he would maintain the gut in a useful and patulous condition, it is necessary to have the patient wear a gutta-percha tube, which can be removed at will. Finally, an argument which needs no champion is the fact that thirty-three per cent of all cases of carcinoma (as shown by the researches of Jessop in one hundred and two cases which were allowed to follow their course without any surgical interference) die from obstruction.

To sum up, I would urge that, *prior to every excision in every painful case*, and in every case where the disease was situated *high up*, a colostomy be made, the choice being in favor of the left inguinal. The method of excision recommended by the French surgeons has been that which I have utilized, preceding each excision, however, by a colostomy two or three weeks prior to the final operation. In this the main feature is a deep incision which exposes the posterior segment of the rectum from the anus to the coccyx, when it is an easy matter to dissect out the rectal tube until one comes to the anterior portion. Here, if it is found that the disease involves one or more of the coats of the vaginal wall, it is, in my opinion, best to remove a longitudinal segment of the entire thickness of the same, as it both renders the operation safer and more easily accomplished, and does not, as Kelsey would infer, greatly increase the danger. When the sphincters are involved a circular incision should surround the anal opening, and all be removed together. Dr. Guerin's suggestion that the gut be cut through by the *écraseur*, modified by the passing through the normal gut of several threads for purposes of fixation of the proximal end after removal, as recommended by Verneuil, has been the

procedure employed in the excisions I have made. The proximal end is then to be stitched to the posterior angle of the perineal incision at the left side of the coccyx, and, after stitching up the vaginal wound in much the same way as after a posterior colporrhaphy or laceration, deep transverse perineal stitches render the making of a new and extensive perineal body very easy.

When the type of the disease is that of the cauliflower-like growth known as papillo-carcinoma, I believe the best practice is to remove it with the curette rapidly and well down to the base of the growth. The hemorrhage, very active and easily provoked while in the soft tissues of the tumor, is easily controlled when the base has been reached. In two such cases I have been successful in for a time relieving them of their distressing symptoms, but have not been able to follow their history for more than six months after operation.

The case I now report is of interest as showing the benefit to be derived from surgical interference.

CASE.—After having suffered with what she believed to be hemorrhage, the patient came to St. Luke's Hospital a year and a half ago with symptoms of absolute stenosis of the intestine, and requiring immediate relief. The diagnosis of carcinomatous obstruction of the rectum being made, a colostomy in the left lumbar region was done, with relief to the urgent symptoms. After the lapse of three weeks, the artificial anus being well established and healed, an excision of the rectum was practised after the usual method by a deep posterior incision from the anus to the left side of the coccyx well down to the posterior wall of the rectum, which was then dissected laterally until the vaginal wall was reached, which was found to be involved to the level of the posterior lip of the cervix in the carcinomatous growth. The posterior wall of the vagina was removed, as well as the rectum, to this level, including the sphincter muscles. The rectum was stitched to the skin of the left side of the coccyx, and deep transverse stitches were inserted to make a new perineal body. There was speedy union and rapid convalescence. After the lapse of one year she returned to me with the lower artificial anus presenting a normal rectal mucous membrane normally attached to the integument to the left side of the tip of the coccyx,

with the upper artificial anus almost closed from surgical interference by Dr. John E. Owens, but with a return in the perirectal tissue of the original trouble to such an extent that the line of cicatrix in the vaginal wall posteriorly and in the anterior rectal wall was again invaded by the new growth, which was beginning to cause painful defecation as at first. The patient, being much frightened with the symptoms of a return, came to me requesting a repetition of the operation. This at first I refused to make, telling her that I did not believe her longevity could be increased by such a procedure nor her condition materially improved. She then consulted Drs. Parkes and Fenger, both of whom, she stated, promised to operate upon her and offered her hopes of at least temporary relief. Coming back to me with this history and the threat that if I would not operate somebody else would, I had her admitted, in the last week of September, 1890, to the Michael Reese Hospital, where I excised the portion of the rectum which had been drawn down and attached to the integument, at a point on a level with the posterior lip of the cervix. I dissected out laterally, in so far as I could reach, all indurated tissue. I then found that it was impossible to bring the end of the rectum down to the integument, no matter how far I might extend my posterior incision, and decided that the best thing I could do would be to suture the end of the rectum at the top of the vaginal incision after the cicatrix had been removed. I did this, then united the vaginal mucous membrane, much as is done for a laceration or operation for posterior colporrhaphy, and brought the lateral pelvic tissues together by very deep, heavy silk sutures, and, strangely enough, obtained a perfect union. The patient has, since the second week in November, been at home, is feeling well, has gained in weight, and has several times come to my office, each time stating that she feels better than she did during the year which elapsed after the first operation, that she now has control of the bowel and is capable of evacuating its contents without any artificial assistance—that is, without a douche, which I advised when she first left the hospital.

I believe this to be a unique case. I do not find, in what literature I possess, reference to a similar operation. I have no doubt that she will ultimately have a return of the trouble,

because the cicatricial contraction which normally occurs with any inflammatory deposit about the rectum, whether from specific or simple inflammations, has already produced some suspicious induration.¹

CASE OF TUBAL PREGNANCY; RUPTURE; DEATH.

BY

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(With one illustration.)

ON September 11th Mr. B. called on me to say that his wife was flowing rather freely, and requested me to prescribe for her.

After some questioning I gave the usual remedies and advice. The treatment ordered for Mrs. B. had no effect; after the flow had lasted in all about three weeks it ceased. Prior to this the lady had called on me, and I had questioned her diligently as to the probability of her being or having been pregnant and aborting. She could not deny the probability of a pregnancy, but assured me that at no time had any clots or shreds come away, and at no time had she had pains of any kind whatsoever. She assured me that the flow did not differ from her ordinary menstrual discharge, except that it was at times slightly more copious and continued too long. She was confident that there was no abdominal enlargement, and was not conscious of any symptoms which she could attribute to a possible pregnancy. I had no reason to doubt her statements, and did not feel warranted in demanding an examination.

About a week later metrorrhagia again set in, lasted some few days, and ceased. This flow Mrs. B. considered her regular monthly sickness, as it came at, and continued, the proper time.

On October 12th, at 8 P.M., I was called to Mrs. B. because

¹ April 18th. Patient, seen to-day, continues well; has increased in weight, and has perfect control of bowels.

of some rather severe pains in the abdomen. I found her lying in bed on her left side, somewhat restless, with a pulse of 70, regular and of good quality. She had been out driving that afternoon, feeling unusually well and cheerful. Upon coming home she experienced a desire to go to stool; had severe pain, and felt faint. The suspicion that she had eaten something noxious was strengthened when her husband informed me that oysters which he considered "sour" had made part of her dinner. In view of the good condition of her pulse, her having eaten sour(?) oysters, the absence of signs upon abdominal palpation, "with exception of slight general tenderness," the only diagnosis ventured upon was



P. Probe; R, round ligament; E, edges of rupture; X, clot at point of rupture.

toxic ingesta. A hypodermic of morphine, with orders to repeat by the mouth, and some whiskey, constituted the treatment. At 2 o'clock that night I was called in haste, and arrived at the bedside to find Mrs. B. gasping her last.

The fatal termination of what I considered a trifling illness so shocked me that for the time being I was incapable of a retrospective diagnosis; I had summoned aid without reflecting that it was useless.

Upon the arrival of Dr. Bean and the recital of the history to him, he suggested ectopic pregnancy, with rupture of cyst as the probable cause of death. I immediately concurred in this opinion; and the advisability of an autopsy being presented to Mr. B. and others interested, consent was readily obtained.

Autopsy.—This was made thirty-two hours after death, in the presence of Drs. I. N. Power, J. W. Bean, S. D. McCauley, H. V. Perry, and A. F. Fuchs. Only the pelvic viscera were examined. Body well nourished; rigor mortis well marked. An abdominal incision exposed the blanched intestines and a large quantity of blood in the abdominal cavity. The pelvic viscera, with exception of right appendage, normal; uterus not perceptibly enlarged. The right appendage presented an ovoidal swelling which did not encroach upon the uterus nor implicate the free extremity of the Fallopian tube. This tumor, or cyst, is two and one quarter inches in its longest and about one and one-quarter inches in its shortest diameter; upon its antero-inferior surface is a ragged circular rent from which protrudes some clotted blood. An incision in the longest diameter of the cyst, "involving the rent," allowed the escape of a small quantity of clear liquid and exposed a perfect embryo. The general opinion of those present was that gestation had not passed the sixth week. The amount of blood in the abdominal cavity was roughly estimated at two quarts. No evidence of recent peritonitis; no adhesions, no flexion or malposition of uterus or tube. Search for corpus luteum neglected.

A more minute examination of the tumor, as also a cursory microscopical examination of embryo, gave the following result: The fimbriated extremity of tube was pervious up to the tumor; the proximal portion occluded. The round ligament could be readily traced, and lay between tumor and uterus. The distended tube with its peritoneal covering formed the external envelope of the cyst. The embryo, with attached umbilical vesicle and shred of membrane, weighed eight grains and had an extreme length of three-quarters of an inch. The microscopical examination of the embryo corresponded closely to that reported by H. Hun in the *American Journal of the Medical Sciences*, vol. lxxxviii., page 98.¹ There was no evidence that gestation had passed the fifth week.

A short history of Mrs. B.'s life prior to the disastrous pregnancy will show under what difficulties we may have to

¹ Hun's description of the external features of the embryo in his case is identical with my finding, with exception of umbilical vesicle, which was absent in his and present in my case.

labor in making a diagnosis. The lady married in July, 1888, at the age of 29, became pregnant in July, 1889, and was delivered April 6th, 1890, of her first child. Her pregnancy and final delivery passed without a single unfavorable circumstance; she had nursed her child up to the last few hours of her life, and, with the exception "of feeling a little pulled down," had been entirely well up to the beginning of September. She did not remember ever having had menstrual disorder; had a show in June or July last past.

In a search through the literature at my command I find three cases, out of a total of one hundred and fifty-nine reported, whose important features resemble those of my case. A striking resemblance is presented in the case reported by Hun (l. c.), in which fatal rupture occurred about the twenty-eighth day of gestation. The case reported by G. F. Engelmann,¹ and the history of a specimen from Harvard Museum,² are very similar to mine. Aside from these three cases, my research confirms the fact first noted by Andrew F. Currier,³ that extra-uterine pregnancy predominates on the right side. Thus, out of sixty-two cases of tubal pregnancy, the right tube was involved in thirty-one, the left in sixteen, and position not stated in fifteen cases.

To return to a consideration of our case and a presentation of its points of interest. We have only one symptom, prior to the fatal rupture, which could direct attention to the true state of affairs. This symptom is in no wise characteristic; in fact, is misleading. A most searching bimanual examination would, in all probability, have been of no avail. For it must be borne in mind that the first metrorrhagia began coincident with, or just prior to, fecundation. If the pathological finding, "embryo of at most thirty-five days," is any criterion, it is highly probable that the hemorrhage came on during or immediately after coition. To place the fecundation prior to September 5th would invalidate the pathological finding; and to assume that the metrorrhagia began after the 6th would be equivalent to doubting the veracity of Mrs. B. and her husband. Besides, it is not probable that a sensible

¹ Annals of Gynecology, vol. iii., page 376.

² Annals of Gynecology, vol. i., page 222; also a case, page 185.

³ AMERICAN JOURNAL OF OBSTETRICS, vol. xx., page 1233.

woman would become alarmed at a *menstrual* discharge lasting five days or less, and seek medical advice, unless there was an unusual coincident occurrence. We have no data upon which to base the opinion that a tubal pregnancy of a few hours can excite a metrorrhagia. And yet, in my case, we are bound to such a conclusion, or that the hemorrhage was primarily independent of, not caused by, the anomalous site of gestation.

The probability of making a correct diagnosis during the first hemorrhage—*i.e.*, any time prior to the end of third week of gestation—is too faint to deserve consideration. As a matter of course an exploratory laparotomy would have been the proper procedure, looking at the case retrospectively. The use of electricity might have prevented the deplorable catastrophe; but, I ask, apart from the hemorrhage, what indication was there for its use? Had it been used and the hemorrhage arrested, would that have indicated a successful treatment of anything? The successful (?) treatment of tubal pregnancy by electricity presupposes a correct diagnosis.

The mere arrest of hemorrhage is not an indication of success in these cases; upon what grounds, then, could I have based a continuation of the treatment? In my ignorance of the true state of affairs, the cessation or continuance of the metrorrhagia under the use of electricity would have been equally misleading.

Strangely enough, I had under my treatment three other cases of uterine hemorrhage at the same time.

Mrs. W., phthisical, had been delivered in the spring; her baby died shortly after of bronchitis. Menstruation (?) came on in August and lasted uninterruptedly for three weeks. A bimanual examination served no purpose other than to cause suffering. Subsequently she had repeated attacks of hemorrhage, which finally ceased under the administration of *ol. terebinth. et cinnam.*

Mrs. A. came to my office with a specimen for examination, and gave the following history: Was menstruating rather freely; sudden violent pain; nearly fainted; found a shred on changing her napkin. The specimen presented the ordinary appearance of decidual membrane, and was pronounced such by a colleague. However, as a microscopical

examination failed to detect villi, I inclined to the diagnosis of membranous dysmenorrhea.¹

Mrs. K. had slight continuous hemorrhage with pain; said she was not pregnant. Examination showed patulous os, soft cervix, uterus enlarged and empty. Patient admits having had a miscarriage some six or eight weeks back.

I submit that two of these cases, certainly the case of Mrs. A., correspond as nearly to the symptom-complex of a tubal pregnancy as does the case of Mrs. B.

When I began this article it was my intention to work up the literature at my command, and from it draw logical deductions as to etiology and diagnosis. However, I have been disappointed in my expectations. The history of one fatal case is a picture of all the fatal cases, and the history of one case treated successfully by laparotomy is a picture of all the successes. So far as diagnosis is concerned, medical science has gained little through the deaths consequent to repeated errors. Prior to rupture there is but the non-characteristic metrorrhagia which may call our attention to the dangerous condition of our patient.

The pathognomonic membrane is often absent, and when present serves but to raise the question of a possible membranous dysmenorrhœa.² That tubal "ectopic" pregnancies occur more frequently on the right side need not surprise us when we consider that the right side is functionally more active than the left in most people. It would be interesting to ascertain if there is any proportionate coincident left-handedness in left-sided extra-uterine pregnancies. As pathological processes are more frequent in the organs of the left side, a microscopical examination of the tube not involved would throw light upon the possible condition of its fellow precedent to the pregnancy. I hardly think that such research, extended over a large number of cases, would confirm the

¹ Mrs. A. assured me that she was not ordinarily dysmenorrhœic; so far as she could remember, this was the third or fourth attack, and the severest one of her life.

² Wyder claims that the decidua of pregnancy may be distinguished by its cell structure, "irregular, large," from the membrane of dysmenorrhœa. This C. Ruge denies, and Schroeder agrees with R. See "Handbuch d. Krankheiten d. weiblichen Geschlechtsorgane," Carl Schroeder, Siebente Auflage, Seite 348.

opinion that desquamative salpingitis is an etiological factor. The fact that many cases of extra-uterine pregnancy are not pure tubal pregnancies would militate against this theory, as would also the fact that ectopic gestation frequently follows upon a period of sterility. I would rather incline to the opinion that a certain lack of functional energy would account for the sterility and also for the ectopic site of gestation. Whatever the etiological factors may be, they are only of importance in so far as they aid us in diagnosis.

After rupture has occurred the diagnosis should offer no difficulties. An exploratory puncture by the vagina with an aspirator or large hypodermic needle would clear up all doubts in the majority of cases. A positive finding after such puncture would, to the conscientious practitioner, permit of but one course of treatment—a laparotomy. It seems a little more than possible that the discharge of ordinary menorrhagia, and the metrorrhagic discharge of extra-uterine pregnancies, may differ microscopically. At least it seems to me that diagnostic certainty in these cases can only be evolved by a close study of the hemorrhage. The first rupture and fatal internal bleeding may occur without pain or marked symptoms. He, however, who has witnessed a typical rupture *will never forget it. The symptoms, when well marked, are definite enough and easy to understand, especially AFTERWARDS* (Cushing).

STRYCHNIA AND THE HOT DOUCHE IN THE PROPHYLAXIS OF PROTRACTED LABOR.

BY

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THE following observations on the use of small doses of strychnine, given for a period prior to labor, may prove interesting. From a therapeutic point of view they are certainly useful.

I have given strychnine in one hundred cases, and the effects, as far as the children were concerned, were very gratifying. Out of the entire hundred births there were only two children still-born. One of these had evidently been dead in utero for some considerable time, and was quite macerated and softened. The other was lost by the twisting about the neck of a short cord.

With regard to the mothers, the strychnine acted as a bitter tonic and improved the appetite; its use stimulated the movements of the bowels, and to some extent prevented the constipation that is so general in pregnancy. At the time of labor not one of the patients treated with the strychnine had convulsions, so that it cannot be regarded as unsafe for this reason. Its action on the uterus was satisfactory, the contractions being regular and normal, and entirely free from any tetanic condition, as is sometimes seen after the administration of ergot during labor.

The state of uterine tone was improved by the strychnine. The contractions of the uterus were longer maintained, more regular and satisfactory, than in the case of those to whom the strychnine had not been given. The after-contraction of the uterus was better, and after-pains were greatly lessened, as the firm condition of the uterus prevented the formation of clots and the occurrence of jerky, twitching, clonic uterine action that is often so distressing to the patient. The amount of hemorrhage was reduced. There is an impression in the minds of many that the bleeding after labor is arrested by the formation of clots in the uterine sinuses. Such, however, is not the case. The uterine vessels are surrounded by the interlacing muscular fibres of the uterus. It is the steady, firm contraction of this muscular tissue that must be regarded as the true hemostatic, and not dead, inert clots.

Another feature well noted in the cases where strychnine had been given was that the recovery was quick and better than the average. There are several reasons for this. The shorter period of labor must have had some influence. Then the fact that there was less blood loss is important. The firm tone of the uterus, effecting speedy and good involution and controlling the after-pains, also had its share in aiding the

recovery. Good, firm uterine tone lessens the risk of septic absorption, and by so much favors the patient's recovery.

Concerning the duration of labor, the following figures may assist in conveying an idea of the general usefulness of the drug. It should be remarked the treatment was adopted in cases where previous labors had been protracted owing to uterine inertia, irregular and crampy pains. Primiparæ were excluded in all cases. The one hundred cases treated with the strychnine gave an average of nine hours, whereas the average of the previous protracted labors, in the same one hundred patients, was seventeen hours. Here we have an average gain of eight hours on previous tardy deliveries, the second stage being much shorter.

The dose of the drug varied with the susceptibility of the patient. One could not tolerate more than the sixtieth of a grain. A number had reached their maximum dosage when taking one-fortieth three times daily. About one-half of the entire number bore the thirtieth of a grain well. The largest dose given in any case was the sixteenth of a grain three times a day. This amount was administered to one patient, who, during two prior labors, had almost complete uterine inertia.

It is quite possible that other tonics, such as iron and quinine, would exert a beneficial influence where there was anemia and debility.

As a means of prophylaxis against a protracted first stage caused by a rigid and undilatable os, I strongly recommend the hot douche. All are familiar with the excellent effects of this measure in the first stage of a lingering labor, but it has not been used as a prophylactic against a tedious first stage due to rigidity of the maternal tissues. The plan I have adopted is to take a new tin pail holding about two gallons, and have a small spout put on the side near the bottom. To this are attached a few feet of rubber tubing carrying a good vaginal nozzle. The pail is filled with water at 105° to 110° F. The patient sits over a receiving vessel; the nozzle is then introduced and the flow started. In this way the cervix and vagina are thoroughly douched. One caution is needed—that the hydrostatic pressure be not too great. All that is requisite is just enough to make the water flow.

It may be said that the use of the hot water will induce labor before the full term has been reached. Such, however, has not been the case in my experience. But grant that it should come on a few days sooner than it would if the douches had not been used, what harm could there possibly arise from such a circumstance? If there is not too great force in the water flow, so as to effect some separation of the membranes, there need be no fear on this score.

The douche ought to be used twice a day for a short time before labor, a week or ten days being sufficient to soften and relax a very rigid os. The local application of the hot water stimulates the blood supply of the pelvic viscera, increases the activity of the glands, and allays much of the sensitiveness of the cervix. When labor sets in the os yields sooner, is less tense and less liable to tear. The first stage is in this way very materially shortened. The abundant secretion of mucus aids the second stage. The second stage is also shortened by the relaxing action of the douches on the perineum; it, like the os, is found to yield to the pressure of the advancing head, and time and suffering are saved.

These douches may be ordered with advantage in all cases where rigidity and slow dilatation is probable, as in primiparæ, or where previous tedious labors have been known to be due to tense and rigid structures. Many patients of this latter class have gone through subsequent accouchements with comparative ease and rapidity after the use of the hot water for ten days prior to term.

CORRESPONDENCE.

THE REMOTE RESULTS OF SHORTENING THE ROUND LIGAMENTS FOR UTERINE DISPLACEMENTS BY THE NEW OR DIRECT METHOD.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS.

DEAR SIR:—In the March, 1891, number of your valued journal appears an article by Dr. Henry P. Newman, of Chicago, with the above title. In it, page 259, the author says:

"I wish to call attention again to the method of operating which I brought before the profession in my paper upward of two years ago.

"I do this for two reasons: First, I can now speak with the utmost confidence of its practical utility and the permanence of its successful results; and, second, many of its distinguishing features have been appropriated by other operators, notably Dr. G. M. Edebohls, of New York, who presented at the Tenth International Congress at Berlin a very creditable résumé of the operation. While I congratulate the doctor on the very able manner in which he brought it to the notice of the foreign medical profession, I would remind him that a priority of about a year and a half of practical demonstration belongs to Chicago."

Dr. Newman's charge practically is that I appropriated his operation and presented it as my own. The large majority of readers would, in addition, probably draw the inference, from the above quotation, that this was done without giving Dr. Newman due credit.

To dispose first of the latter inference, allow me to quote from my paper on "A Modified Alexander-Adams Operation," read before the Tenth International Medical Congress and published in the New York *Medical Journal* for October 11th, 1890:

"Many and various are the modifications of Alexander's operation which have from time to time been proposed by different surgeons and gynecologists. I am not aware, however, that the combination of procedures above described has ever been advocated. The nearest approach to it which I have found recorded is in a paper read before the Gynecological Society of Chicago, by Dr. Henry P. Newman, entitled 'Alexander's Operation, with Report of Cases,' to which I must refer for the details of Dr. Newman's technique."

After a perusal of the above I certainly will not be accused of ignoring Dr. Newman in my paper.

To return now to the question of "appropriations," let us scan the three papers already quoted for evidence as to what extent Dr. Newman and myself *may* have "appropriated" each other's ideas.

¹ AMER. JOUR. OBST., December, 1888, p. 1291.

I will premise by calling attention to the chronological order in which the papers appeared. Dr. Newman read his first paper in September, 1888; I presented mine in August, 1890, and Dr. Newman his second in November, 1890.

To quote again from my paper :

“The distinctive features of the method of operation advocated in this paper, briefly recapitulated, are as follows :

“1. The inguinal canal is laid open along its entire length.

“2. The round ligament is sought for and picked up at its point of emergence from the internal ring.

“3. The ligament is drawn out approximately in the direction of its intra-abdominal portion.

“4. The ligament is drawn out from its peritoneal investment by aid of the sense of sight. The shortening of its intra-abdominal portion is thus rendered a matter of absolute certainty.

“5. The method of suture, which, while it closes the canal, at the same time secures the ligament within it.

“6. The method of drainage by silkworm gut.”

Let us now compare the above method, point for point, with that described by Dr. Newman in his first paper. In doing so I may be pardoned an occasional allusion to Dr. Newman's second publication, which appeared after my own.

1. *The inguinal canal is laid open along its entire length*, by passing a grooved director into the external ring and along the canal to opposite the internal ring. The anterior wall of the canal is then slit open by a knife passed along the director, thus exposing the contents of the canal along its entire length. Up to the point of slitting open the canal, the steps of my modification correspond with the technique originally proposed by Alexander. Dr. Newman in his first paper says: “I begin the operation by cutting directly down upon the internal inguinal ring, using the superficial epigastric vein, and beneath this the ilio-inguinal nerve, as guides, lying as they do directly over the canal of Nuck.” Nowhere does he speak of laying open the canal in its entire length. In his second paper, summarizing the points of his operation, Dr. Newman says: “Through a single nick in the course of the separated fibres of this aponeurosis (of the transversalis muscle) the blunt hook may often be passed into the canal and the round ligament

pulled out in less time than it takes to tell it; *or by lengthening the incision it may be exposed along the canal in its entirety*" (italics mine). And again: "The intercolumnar fibres and tissues about the external ring are not interfered with or irritated in any way."

2. *The round ligament is sought for and picked up at its point of emergence from the internal ring.* This constitutes the really essential feature of both Dr. Newman's and my own modifications of Alexander's operation, and for this I cheerfully and unreservedly concede Dr. Newman's claim "that a priority of about a year and a half of practical demonstration belongs to Chicago."

3. *The ligament is drawn out approximately in the direction of its intra-abdominal portion.* No mention of this fact is made in Dr. Newman's first paper. In his second paper occurs this passage: "The force used in pulling out the ligament is both brought to bear upon it at its strongest portion and is in a direct line with its intra-abdominal course."

4. *The ligament is drawn out from its peritoneal investment by aid of the sense of sight. The shortening of its intra-abdominal portion is thus rendered a matter of absolute certainty.* No allusion to these matters is found in Dr. Newman's first paper. In his second he states: "There can be no doubt here of the identity of the ligament, as a duplication of the peritoneum is seen surrounding it at its abdominal extremity." "Aided by the sense of sight, and seizing the ligament above the inguinal canal, we can feel assured that we are drawing upon the abdominal portion of the ligament, and not merely stretching its inguinal section."

5. *The method of suture, which, while it closes the canal, at the same time secures the ligament within it.* Without inflicting details, I will merely state that Dr. Newman's and my own methods of suture differ materially.

6. *The method of drainage by silkworm gut.*

Dr. Newman in his first paper advocates drainage by a rubber tube containing iodoform wicking. In his second paper he is inclined to dispense with drainage to a great extent. I invariably employ silkworm-gut drains.

Having thus pointed out wherein Dr. Newman's modification of Alexander's operation, as described both in his first

and second papers, differs from my own, I leave it to your readers to decide as to what extent I "appropriated" the distinguishing features of Dr. Newman's operation, and in how far I was correct in my statement, "I am not aware, however, that the combination of procedures above described has ever been advocated. The nearest approach to it which I have found recorded is in a paper by Dr. Henry P. Newman," etc., etc.

In conclusion, Mr. Editor, allow me a little confession. The above lines have been penned not so much in a spirit of controversy as from a desire to embrace an opportunity to again call attention to a surgical procedure, the operation for shortening the round ligaments, the therapeutic value of which is as yet far from being appreciated by the profession. I fully agree with Dr. Newman "that the fault does not lie in the theory of Alexander, but in the technique of its application." I furthermore fully agree with him that the essential of a successful and reliable technique consists in searching for and drawing out the round ligament at the *internal* ring. This principle Dr. Newman has carried out in his own way, I in mine. To Dr. Newman, as I have already stated, belongs the priority of its practical application; the technique, however, especially as described in his first paper, differs essentially from my own. I think the profession owes a debt of gratitude to Dr. Newman for taking the trouble to report the highly satisfactory final results in his cases, which, I may add, are fully duplicated and substantiated by my own experience. Thus far I have operated nineteen times after my own modification, in addition to five operations performed after the old method, and I have yet to learn of the first case, in which the operation was done for retroversion or retroflexion, in which the uterus has again fallen back. In properly selected cases I scarcely know of another operation in gynecology which gives so uniformly satisfactory results to both patient and surgeon.

Very truly yours,

G. M. EDEBOHLS, M. D.

NEW YORK, March 22d, 1891.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, February 17th, 1891.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

RUPTURE OF THE UTERUS, WITH PROLAPSE OF THE INTESTINE;
TOTAL EXTIRPATION; DEATH FROM SHOCK.

DR. H. C. COE exhibited a uterus which he had removed two weeks before, and related the following details regarding his connection with the case: On February 2d, at noon, I was summoned by Dr. E. H. Grandin (to whom I leave the narration of the previous history of the case) to perform laparotomy for rupture of the uterus. I responded promptly, and found a woman, weighing two hundred and fifty pounds, with an enormously fat abdomen, in fair condition, her pulse being 120 and temperature 99°. The accident had occurred the previous night, but the shock was so profound at the time that Dr. Grandin very properly postponed operative interference until the patient rallied. Having learned that a coil of intestine had prolapsed through a rent in the uterine wall, and had been replaced and supported by a tampon, I hoped that it might be possible to save the patient by inserting a large drainage tube into the peritoneal cavity through the rent, and tamponing around it with iodoform gauze. On introducing my hand into the vagina, however, I found it filled with coils of intestine, which protruded through an extensive laceration at the vaginal junction. It was clearly impossible to replace the gut and to keep it in position; there was no probability that the tear would heal without suturing; and, furthermore, the patient was already septic, as shown by the presence of a foul discharge on removal of the tampon. Laparotomy seemed to offer the only chance of saving her life, and that a slim one. The position was clearly explained to the husband, who assented. It was impossible to move the patient to a table, on account of her weight, so that I was obliged to operate in the bed, with a due observance of anti-septic precautions. With the able assistance of Dr. Grandin I quickly opened the abdomen, lifted out the uterus, and decided at once that I could neither suture the rent nor do a Porro, on account of its situation at the vaginal junction. The tear was exactly transverse, and extended between the

lower and posterior borders of the broad ligaments without including them. There was neither blood nor purulent fluid in the peritoneal cavity, and no evidences of peritonitis. As the uterus was already partly torn away, I decided to perform total extirpation, which was easily accomplished, without hemorrhage, after clamping the broad ligaments and separating the bladder. The cavity was thoroughly irrigated and the intestines were examined. The prolapsed portion, including about four feet of the small intestine, was black and gangrenous. Resection was impossible on account of the amount of gut involved and the condition of the patient. The pelvic cavity and vagina were tamponed with gauze and the forceps were left *in situ*. The entire operation occupied not much over half an hour, and the patient bore it well, but died nine hours later. If it had not been for the condition of the intestine there would have been a fair chance of saving her. The principal points of interest about the case are :

1. The fact that the tear was at the vaginal junction and was exactly transverse; the same condition existed in a similar case in which I advised laparotomy, and showed that the injury is caused not so much by the actual use of instruments as by the over-stretching and splitting of the thinned lower segment during the extraction of an unusually large head, even when the pelvis is of normal dimensions. A rupture which begins in an old laceration of the cervix and extends obliquely upward has a somewhat different etiology.

2. Indications for operation. Operative interference would certainly have been unwise immediately after the occurrence of the accident, on account of the condition of the patient; but after she had rallied it offered the only prospect of recovery. The nature of the lesion and the condition of the gut could not have been certainly known without opening the abdomen.

3. In this case extirpation was the operation indicated, on account of the situation and extent of the tear. In my first case (successful) I was able to form a stump, in the second (seen with Dr. Kletzsch) the tear was small and accessible and was easily sutured; but in this instance extirpation was the easiest, safest, and, as I believed, the best procedure. This only shows that there are no fixed rules for all cases; each must be treated according to the judgment of the surgeon.

DR. EGBERT H. GRANDIN said he saw this case the day before the operation performed by Dr. Coe, in consultation with Dr. Tynberg. The woman was a multipara; had been delivered only a year and a half previously, with forceps, of a child weighing fourteen pounds and a half. The doctor sent for him because at the expiration of the first stage of labor

the head would not advance, and he deemed instrumental delivery necessary. He found the cervix fully dilated, the head presenting, the occiput posterior, no deformity of the pelvis. The cause of the dystocia was found, as soon as the woman was under chloroform, to be due to the fact that the head was fully extended. He endeavored to flex it, but could not. Dr. Tynberg then applied forceps, but very gentle traction showed him that they were going to slip, and he asked Dr. Grandin to try, who also found that they would readily slip. Giving up forceps, the question arose, what had better be done? He was opposed to embryotomy in the living child, and did not wish to undertake it on this case, which occurred in private practice, unless forced to it. Version was contra-indicated, seeing that the head was engaged and the uterus was very well contracted. It not being a hospital case, Cesarean section was out of the question. Dr. Tynberg, therefore, attempted version, and it proved easier than had been expected. The body was extracted, but the head could not be brought out by the usual methods, and he therefore applied the forceps and with one traction delivered it. The woman's pulse at that time was good. The child was still-born and weighed fourteen pounds and a half. The placenta did not come away in twenty minutes, and Dr. T. inserted his hand into the uterus for the purpose of removing it. Inside of ten minutes at least, he told Dr. Grandin that he was unable to remove the placenta, that for some reason he could not get his fingers between the amnion and uterine wall. On removing his hand three feet of intestine followed. Dr. Grandin then removed the adherent placenta, pushed back the intestine, and tamponed with gauze. They consulted as to the advisability of immediate laparotomy. The woman's condition was very bad, the pulse had become very rapid (140), was very weak, the patient looked blanched. There was no external hemorrhage, and he was satisfied that her condition was not due to internal hemorrhage, otherwise he would have performed laparotomy at once. Inasmuch as he could exclude hemorrhage, and feeling that it would kill the patient to add to the existing shock that of an immediate operation, they decided that it was best to wait. They found next morning that she had rallied, and Dr. Grandin having an appointment which prevented his doing laparotomy, he had his friend Dr. Coe come and perform the operation, which had just been described.

An important question in the case was, How did the rupture occur? He could not say. He was satisfied, however, that the uterus was not ruptured when he first saw the patient; he was satisfied that it was not ruptured by the attempts at extraction with the forceps applied to the before-coming

head. As to version, it was performed by a physician who was one of his ex-house officers at the Maternity Hospital, whom he knew to be a careful man, and he was satisfied rupture did not take place then. Forceps to the after-coming head would rather have ruptured the uterus transversely into the broad ligament, it seemed to him, than have separated it at the cervico-vaginal junction. In looking for the etiological cause of the rupture, we must recall the nature of the dystocia—an occipito-posterior in great extension.

He therefore thought Dr. Coe's explanation was the more probable, that a large child distending the lower uterine segment caused the body of the uterus to separate from the cervix. The operation performed by Dr. Coe was a simple one, and the woman would have lived had it not been for the gangrenous condition of the intestines, which added to the shock. The points which he would like to have discussed were, whether laparotomy should have been performed at the time the tear took place, and what caused the rupture. He would repeat that the reasons why he did not perform laparotomy at once on discovering the rupture were twofold: first, the absence of hemorrhage; and, secondly, the deep shock the patient was in.

DR. R. A. MURRAY said that, in thinking over the case as it had been described, it seemed very difficult to state when the rupture did occur, yet that was an all-important point to determine. What was the cause? Extirpation seemed to have been performed perfectly and was not the cause of death; there was no effusion of blood into the peritoneal cavity, so that rupture must have taken place at the vaginal junction and extended very little into the uterine wall. Death was due to the gangrenous condition of the intestine.

The question arose whether, in the introduction of the hand to do version, the uterus was well supported so as to have the posterior wall of the cervix turned away from the vaginal vault. If there had been rupture before that time, Dr. Grandin would have discovered it during his examination. If it had occurred during traction with the forceps, there would have been hemorrhage when they were taken off. And, as Dr. Grandin had said, a bilateral tear in the cervix with the forceps would have been likely to extend directly laterally into the vault without involving Douglas' pouch much. He thought it most likely that the tear had been made during the act of version, the uterine surface having been pressed upon too long by the child's head. In the endeavor to introduce the hand, pressure could have been made too far posteriorly, or the posterior wall of the uterus carried up with the hand, which he thought was a mistake easily made. The uterus should be thoroughly supported when

introducing the hand, and care should be taken to introduce the hand in the shape of a cone, particularly if the cervix were soft and flabby. Again, he thought this was the cause because when the child was born the impinging of the child on the cervix prevented any hemorrhage taking place then, while forceps applied to the after-coming head could hardly have caused the tear, or, if it did, the tear would have been wider, more ragged, and probably would have been lateral. He had seen tears produced during version in two instances by men of wide experience who had a hospital service, the tears extending so deeply into the cervix as to cause severe hemorrhage and necessitate the insertion of three or four sutures. Then the fact that gangrene of the intestine had taken place so soon also led him to think the tear took place during version. The empty uterus could not have made so great pressure, while the woman was lying on her back after delivery, as to cause gangrene to take place. He thought, then, that the gut must have been compressed during the passage of the child, and, therefore, that rupture must have taken place sooner or during version.

Should laparotomy have been performed immediately? Dr. Murray thought it was good practice to wait, tampon the vagina until the patient had recovered from shock. The mortality from such operations, when done immediately, before recovery from shock, had been very great, much greater than by the expectant plan of tamponing around a catheter or double tube with iodoform gauze after clearing out the cavity. The statistics in the Vienna and Berlin hospitals gave much better results from drainage where there had not been a very large effusion of blood, of liquor amnii, or the fetus itself had not been extruded into the abdomen.

He thought it probably would have been well in this case had the patient been turned on the side, and the intestine kept up in a way similar to that in which the prolapsed funis is kept up, by a tampon in the vagina, relying on antiseptic tamponing of the uterus if hemorrhage were marked, until an opportunity was given to do a further operation if necessary. He believed the necessity for laparotomy might have been obviated in that way, for after vaginal hysterectomy the surgeon did not have to rely upon anything more than a tampon to keep the intestine up; in fact he had nothing else to rely upon. Thus there would be free enough drainage, while the gut would be retained in place. But after gangrene of the gut had developed, he believed the patient's chances were very small. The operator did the proper thing, and carried it out well, and of course could not tell whether the gut was gangrenous until he actually had it in his hands at the time of the operation. Its extent prevented its resection.

DR. MALCOLM McLEAN wished to speak of the possible cause of the rupture of the uterus in this case, as he had seen several cases in which the accident had occurred from causes to which it was not likely to be attributed. He was firmly convinced, after watching this very unfortunate method of delivery by the forceps with the occiput posterior, that a great deal of injury was done the soft parts of the mother by the head of the child itself as it was held in the forceps. With the forceps applied to the head while the occiput was posterior and extended, not flexed, the head became distorted and the posterior segment became converted into the shape of a big bivalve clam or a cutting wedge. Bringing this down against the soft parts as they were on the stretch would almost surely cause rupture. He wished to put himself on record as distinctly protesting against attributing these accidents to attempts at version when made by an intelligent operator. He believed human life was lost by prejudice against putting the hand into the uterus for the extraction of the child in cases of dystocia, preferring to the intelligent hand the introduction of steel blades. He believed that where an accurate history could be obtained it would be found, in cases related before the Academy or its Sections, that the forceps in some form had been used in nearly all *before* version had been undertaken, and then the reporter had the ill-grace to attribute the rupture of the uterus to *version*. Dr. Murray might be right in attributing rupture, in the case reported to-night, to attempts at version, but the speaker was firmly convinced that there was greater danger of the accident taking place from the application of the forceps to the extended head with the occiput in the posterior position. He had seen the occiput in this position brought down with comparatively mild pressure by the forceps, and yet it had cut through the soft parts down through the rectum before it caused any rupture of the perineum externally. Let the upper part of the vagina be placed upon the stretch, and then, like any of the other soft structures in like condition within the pelvis, it would be likely to snap from even a moderate pressure blow during forceps delivery. Especially is there dangerous pressure at the sacral promontory when forceps are used, in posterior occiput cases, at the superior strait.

DR. HANKS asked Dr. Grandin how long the intestine had been protruding.

DR. GRANDIN replied that the portion of intestine came out when the doctor withdrew his hand on desisting from attempts to remove the placenta. Dr. Grandin at once washed it, replaced it, removed the placenta, then thoroughly pushed up the intestine and put in a firm wad of iodoform gauze to hold it in place.

He agreed with Dr. McLean regarding the value of version over the forceps, but he could not agree with him if he thought the forceps had anything to do with causing rupture in this case, for the reason that the forceps were scarcely applied, the head was not compressed, for it was found that it could not be caught or held in the blades, and no real attempt was made at extraction by this means. While in general Dr. McLean's remarks were founded on fact, yet the speaker thought that in this particular case Dr. Murray might be in the right. If the case had occurred in hospital practice, he would have performed Cesarean section; but in private practice we could not as yet do so.

DR. MURRAY referred to a paper which he had written, and in which he had expressed preference for version over forceps in cases in which the head was in the superior strait, extended, and the occiput posterior, the pelvis of fair size for the head. He still held that position, and claimed that version under those circumstances was a comparatively easy operation. In the case related by Dr. Coe and Dr. Grandin, the reason which he had given for attributing the rupture to version rather than to the use of forceps was the fact that the forceps had scarcely been applied, no traction had been made; and if rupture had then occurred there would have been hemorrhage, whereas none took place into Douglas' pouch, nor, as shown at laparotomy, into the peritoneal cavity.

EXTRAORDINARILY LONG FIBROID POLYPUS OF THE UTERUS.

DR. J. HENRY FRUITNIGHT presented the specimen, with the following history:

Mrs. D., age 36 years, married, nullipara, consulted me for pain in back and thighs, accompanied by dysmenorrhea, and she said also that "she had remarked something queer protruding from her privates." Upon physical examination I discovered a fibroid polypus protruding from the os externum into the vagina; it extended down the whole length of the vagina and outside of the introitus vaginæ to the distance of one-eighth of an inch beyond the labia minora.

It was only about one inch in diameter in its thickest portion, being club-form in shape. Its point of attachment was a little distance within the internal os, on the right latero-posterior surface of the uterine mucosa. The patient had noticed its presence about six months. About four years ago a solid fibroid had been removed from the uterus of the patient by enucleation by a well-known physician of this city.

The present polypus was removed by excision with a pair of long scissors, the cervix having been previously dilated, partly by uterine dilator and partly by the finger. After its removal a smaller polypus, similar in general shape, was dis-

covered within the uterine cavity, which was likewise removed by excision. Their seats of attachment were first scraped with the curette, after which an application of Churchill's tincture of iodine was made to the interior of the uterus. Within a few days the patient was about again, nothing worthy of note having occurred after the ablation of the growths.

DR. G. M. EDEBOHLS presented specimens obtained by recent laparatomies:

I. DOUBLE SALPINGITIS; LEFT HYDRO-SALPINX; ABSCESS OF RIGHT AND HEMATOMA OF LEFT OVARY.

In the discussion of Dr. Harrison's paper on "Parametritis, especially in Reference to its Pathological Significance," at our last meeting, I stated that, outside of the puerperal condition, I knew parametritis only as an acute intercurrent affection, secondary to injury or disease of the pelvic organs, its most frequent association being with disease of the tubes and ovaries. When so occurring, rest in bed and hot douches sufficed to remove the parametritis in a week or ten days, although the disease originally causing it persisted.

I cited in illustration a case then under my care—a married woman of 26, ill for four months with pelvic symptoms, and whose pelvic inlet was completely filled with a pathological mass in which neither fundus, tubes, nor ovaries could be recognized. After a few days' rest in bed and hot douches, I could differentiate tubes and ovaries, and, aided by exploratory puncture, was able to diagnosticate a small ovarian abscess of the right, and a hydro-salpinx of the left side. I promised that, in the event of a laparotomy, then contemplated, I would lay the specimens before the Society, whether they corroborated or disproved my diagnosis.

I performed laparotomy six days ago, and found a double salpingitis, the left tube being distended with muco-serum; an ovarian abscess, holding forty to fifty grammes of pus, on the right side, and a hematoma of the left ovary. After relieving the tension of the abscess walls by withdrawing eight grammes of pus through a fine needle, the appendages were enucleated from their adhesions, tied off, and removed without rupture of the abscess. After their removal no palpable pathological product was left in the pelvis; not a trace of anything like parametritis could be felt. Immediately after operation the tubes and ovaries were cut open, in the presence of Drs. R. T. Morris, of this city, and W. Suiter, of Herkimer. The patient has not had a bad symptom and is out of danger.

Inasmuch as the patient had been ill for only four months, and had received no previous treatment, I would not have been

justified in recommending operation, had not the discovery of pus in the pelvis demonstrated the futility and risks of any other treatment and of delay. (Convalescence uneventful.)

II. DOUBLE SALPINGO-OÖPHORITIS, WITH EXTENSIVE CYSTIC DEGENERATION OF PELVIC PERITONEUM.

This specimen represents a mistake in diagnosis. It is derived from a girl of 24, who gave a history of colicky pains and profuse, atypical hemorrhages for six months past. On examination a rounded hard tumor, ten centimetres in diameter, and extending to within seven centimetres of the navel, is discovered, apparently embedded in the anterior uterine wall. Sound enters uterus to the depth of six and a half centimetres. Behind the uterus the enlarged tubes and ovaries can be felt, matted together and fixed by adhesions in Douglas' sac. The diagnosis of fibroma uteri with diseased appendages was made. The presence of the latter was held to contra-indicate electricity.

Salpingo-oöphorectomy was performed ten days ago. On opening the abdomen the lower end of the omentum, enormously thickened and studded with many cysts of various sizes, was found firmly grown to the anterior surface of uterus. The tumor formed by this mass was mistaken for a fibroma. The unhealthy omentum was separated, tied off, and removed, the cysts were punctured and emptied, and the diseased tubes and ovaries shelled out of Douglas' sac and removed. (Uneventful convalescence.)

III. THREE MYOMATA, EXTENSIVELY CALCIFIED, REMOVED BY ENUCLEATION, WITH PRESERVATION OF UTERUS.

The history of the patient from whom these tumors were removed presents one or two interesting features. She is a widow, 63 years of age, who up to the age of 50 had menstruated regularly every four weeks, the flow lasting for eight days. Since 50 she has not lost a drop of blood. At 53, three years after the menopause, she first noticed a hard lump in the lower part of the abdomen, which slowly increased in size. Otherwise her health remained unimpaired until within the past year, since which pelvic pain and pressure symptoms, and inability to work, have rendered her life miserable.

Two fibroids, of stony hardness, are found impacted in pelvis, one behind, the other to right of uterus. A third fibroma is movable above the symphysis.

Laparo-myomectomy eleven days ago. Fibroma No. 1, eight by ten centimetres, is attached by a short, thick, and fleshy pedicle to the fundus. The pedicle transfixed and tied.

Slipping of the ligature over the stump subsequently necessitated the use of the continuous catgut suture to control hemorrhage and close over the stump. Myoma No. 2, eight by six centimetres, is found within the folds of the broad ligament, and enucleated from its bed after splitting the capsule. The cavity of the capsule was closed by the continuous buried catgut suture, starting at the bottom and reaching the peritoneum in five tiers. Myoma No. 3, seven by five centimetres, with an annex three by two centimetres, is embedded deeply in pelvis within the right broad ligament. After enucleation in the same manner as No. 2, it was found impossible to sew in the depths of the capsule. The latter was therefore firmly tamponaded with iodoform gauze, the end of which was brought out at the lower angle of the abdominal wound. The cavity of the uterus was nowhere opened. Patient rallied well from the operation, and is now well on the way to recovery. (Convalescence uneventful.)

The fibromata here presented are so hard from extensive calcification that a section could not be made by the knife. It required a saw to lay them open.

IV. A MYOMATOUS UTERUS REMOVED BY PANHYSTERECTOMY,

the whole forming a fleshy mass, fifteen to sixteen centimetres in diameter, and weighing three and a half pounds. The patient, a woman of 53, was driven by metrorrhagia, pains, and pressure symptoms to seek relief. On examination a myomatous uterus was diagnosticated, reaching to just below the umbilicus. The *pros* and *cons* of electricity and surgery were presented to the patient, and after due deliberation she resolved to stake her chances on the latter.

The operation was performed this morning. After opening the abdomen the uterus was rolled out, and the capsule of the largest fibroma was incised with a view to an attempt at enucleation, which had to be abandoned, however, as impracticable. The elastic ligature was placed around cervix, after previous ligation of the ovarian arteries, and the uterus was cut away above the ligature. The incision laid open the cavity of the corpus, which was cauterized with the Paquelin. The vaginal vault was opened behind and in front of the cervical stump, and a pair of Polk's clamps were passed up from the vagina on either side of the cervix, and adjusted by the hand within the abdomen, one upon either broad ligament. The cervical stump was cut away between the clamps. A number of large arteries retracted from the grasp of the clamp on the right side. They were picked up and ligated separately. After exact hemostasis was secured, the pelvis was packed with iodoform gauze brought out through the

vagina for drainage, and the abdominal incision was closed. Although the operation lasted one and a half hours, comparatively little blood was lost, and the patient left the table with a good pulse. (Recovered.)

In both of these cases the patients had passed the usual age of the menopause, and nothing was to be expected from simple salpingo-oöphorectomy. In such cases, in which the tumors have to be attacked directly, enucleation, as practised in the first case, seems to me to be the ideal operation. If the fibromata are not too numerous it should always be attempted. Should the attempt fail, then I believe panhysterectomy is the indication. The total removal of the cervix settles at once and forever the question of intra- or extraperitoneal treatment of the stump, removes the danger of infection from the latter, and gives us the nicest possible drainage through the vagina.

Incidentally I would mention that the four operations at which the above specimens were obtained were all performed with the aid of the so-called Trendelenburg position—*i.e.*, with the pelvis elevated, the body resting upon an inclined plane, forming, with the horizontal plane of the table, various angles up to one of 45° . I desire particularly to call the attention of abdominal surgeons to this position, the manifold and obvious advantages of which, in the practice of pelvic surgery, are not as yet sufficiently appreciated in this country. The obliging manner in which the intestines gravitate towards the diaphragm out of the operator's way; the increased facility with which the pelvic organs are rendered accessible to sight, touch, and manipulation; the ability to demonstrate these operations to spectators almost as well as those performed in other regions of the body, constitute a revelation when first brought to our notice. I have made use of the position in every one of the laparatomies performed by me within the past eighteen months, and have recently completely reconstructed my operating table to meet all its requirements. Roughly stated, it reduces by about fifty per cent the technical difficulties of intrapelvic surgery, and the wonder to me is now how I ever managed to get along without it. I am sure that I have, by its use, satisfactorily completed more than one operation which formerly I should either have abandoned or performed but imperfectly.

DR. FLORIAN KRUG said that, inasmuch as Trendelenburg's posture had been referred to, he wished to add a few remarks, he having been first to employ it on an extensive scale in this country. Having witnessed Dr. Willy Meyer make use of it in a case of suprapubic cystotomy about two years ago, he was immediately impressed with the advantages which it

offered, and resorted to it in gynecological cases. At first he made use of it only in those cases in which he expected to encounter some difficulty in getting at the diseased tubes and ovaries or small tumors bound down in the pelvis. But soon he found it offered such great aid that he adopted it in all laparotomy cases. He had now employed it in about one hundred cases, and all who had witnessed his operations had appreciated its advantages, and a great many had adopted it since. He knew of no contra-indication, no disadvantage in practice. It certainly did not interfere with narcosis; on the contrary, one was less likely to be troubled by shock, especially in weak individuals who were liable to have acute anemia of the brain. It did not interfere with breathing, and in this position the patient took ether, chloroform, or the mixed anesthetic very well. On the other hand, it rendered all parts of the pelvis readily accessible, and afforded great ease in operating, the operator being enabled to see what he was doing. It was true that some operators claimed to be able to do as much with two or three fingers introduced through a small incision, but for his own part he believed that sight gave information which could not be as fully gained by touch alone. He would rather submit to the extremely slight disadvantage of a somewhat larger abdominal incision than take the serious risk of rupturing a sac containing pus while groping about in the dark with the fingers introduced through a smaller opening.

DR. COE said, regarding the advantages of Trendelenburg's posture, that he had seen Dr. Krug operate on a very difficult case of double dermoid cyst, and had been very much impressed with the facility which the posture afforded. He certainly would adopt it in a difficult case. He asked Dr. Edebohl how he distinguished between an ovarian abscess and a pyo-salpinx.

DR. EDEBOHLS replied that in this case the tube could be palpated and distinguished as a separate entity from the ovarian enlargement.

DR. COE said he had asked the question because he had never known a case in which the differential diagnosis had been positively made until after the operation. Dr. Lange had operated upon a case of his for perityphlitic abscess, Dr. Janeway having seen the patient in consultation. Yet he found an ovarian abscess attached to the caput coli. He had himself recently operated in a case of ruptured ovarian abscess with diffuse suppurative peritonitis, in which the condition had not been suspected. He had seen several other similar cases, which had led him to believe that the diagnosis of an ovarian abscess was most difficult. He could not understand how microscopic examination of pus from an ovarian

abscess could afford any information as to the source of the pus.

DR. P. F. MUNDÉ said that a few weeks ago he had presented a specimen of ovarian abscess to the Society, and stated that he had seen more cases of ovarian abscess than of pyo-salpinx. He did not pretend to have ever made a definite diagnosis of ovarian abscess, as distinguished from pyo-salpinx, before operating, but he had made the diagnosis of pyo-salpinx on several occasions, and had found it correct at laparotomy. The only way to distinguish between the two conditions seemed to be by the peculiar shape of the mass. The fluctuating tumor would be most likely to be circular if an ovarian abscess, and oblong or tubular if a pyo-salpinx. During the present winter he had stated in two cases that he suspected ovarian abscess, basing his opinion on the presence of pus shown by the aspirator, and by the globular shape of the tumor, and on opening the abdomen had found the diagnosis correct.

THE PRESIDENT asked Dr. Krug how long ago Trendelenburg had introduced this posture for operations, and stated that at least twelve years ago, perhaps thirteen or fourteen, he had seen Dr. Noeggerath make use of it in what then was called Battey's operation.

DR. MUNDÉ said he had seen Dr. Noeggerath make use of it about 1876 or 1877, and Dr. Noeggerath then called it Trendelenburg's method.

DR. KRUG thought that, whoever may have first made use of the method, Trendelenburg was the first to show its advantages and bring it to the general notice of the profession for adoption; and that, therefore, it might justly be called Trendelenburg's posture.

DR. EDEBOHLS said he had never claimed to be able to make a diagnosis of ovarian abscess from examination of the pus under the microscope, but he did claim that the diagnosis was possible, and he had himself made it in three cases prior to performing laparotomy. He had even made it before puncturing. The diagnosis was made by feeling the tube in its normal, or nearly normal, relations on that side, while, in addition, there was a roundish mass in the region of the ovary. If, on picking up this mass between the fingers of one hand in the rectum and of the other in the vagina, it were punctured through the vaginal or abdominal wall, and pus were withdrawn, he thought the inference clearly was that the mass was an ovarian abscess.

Regarding Trendelenburg's posture, he had used it in his last forty laparatomies, and had come to regard it as almost an essential in the operation.

FIBROIDS OF THE UTERUS; HYSTERECTOMY.

DR. P. F. MUNDÉ presented the uterus and ovaries with multiple fibroids, and stated that the operation would not have been performed had it not been for the rapid growth of the tumors, as he was very conservative in performing hysterectomy for fibroids. The pedicle had been pierced by pins and an elastic ligature applied. The pins had been removed on the eleventh day. He presented the specimen only for the purpose of putting another case on record as showing the results of the extraperitoneal method of treating the pedicle. He still thought that was the safest method, though not the ideal one.

REMOVAL OF MULTILOCLAR OVARIAN TUMOR FOLLOWED BY
MALIGNANT DISEASE IN THE ABDOMINAL CICATRIX
AND THE PERITONEAL CAVITY.

DR. MUNDÉ presented a second specimen, and stated that on the 19th of November, 1890, he had removed a multilocular ovarian tumor from the left side, the patient, a woman of 48, making an uninterrupted recovery and returning to her home at the end of the fourth week. The adhesions were very extensive. About two months after the operation he was called by her husband to see her at her home because of a small tumor which had begun to develop at the lower angle of the cicatrix soon after her return home, and had attained the size of a mandarin orange. It was red, shiny, and tense, and had a malignant appearance. Owing to its rapid growth, appearance, and the further fact that there was also a large tumor on the left side, within the abdomen, apparently unconnected with the external growth, which had also developed since her discharge, he made the diagnosis of malignant disease. She was taken to the hospital, where he easily removed the small growth, which proved to be extraperitoneal, as he had expected. He then opened the abdomen and confirmed his diagnosis of malignant disease in the abdominal tumor, which could not be removed. It was impossible to make out the origin or attachments of the mass; it was solid, immovable, bled freely on handling, and filled the whole left side of the abdominal cavity. He therefore closed the wound, and the patient had done well since; but, of course, it was expected that the relief would prove only temporary.

He said that at a recent meeting of the Section of Obstetrics and Gynecology of the New York Academy of Medicine, Dr. A. F. Currier had reported a case in which a malignant tumor rapidly developed after a simple ovariectomy. In Dr. Mundé's experience such cases were very rare.

TWO CASES OF HEMATO-SALPINX.

DR. MUNDÉ said he had two specimens to present of that etiologically and perhaps pathologically mysterious disease, hemato-salpinx. Within the last few weeks he had had opportunity to remove a tube in two cases, in the first of which it had burst either immediately before the operation or very shortly previously, and allowed its contents of fluid and clotted blood to escape into the peritoneal cavity; while in the second, though the case was similar, the tube had not burst. Both were evidently cases of hemato-salpinx. What the cause of it was he could not say. According to the teachings of some, these cases of hemato-salpinx were simply cases of ruptured tubal pregnancy; but he found no fetus, no evidence of an ovum. He must admit that, having operated upon a fairly large number of cases of diseased tubes and ovaries, and having tried to define his indications for opening the abdomen in such cases, he had few cases to record of hemato-salpinx, and in those few cases the histories gave no special reason to believe that tubal pregnancy had existed. There was no cessation or irregularity of menstruation, no special reason for believing that the women had been pregnant. At the same time he could not understand why a woman should have a blood tumor in the tube, the tube containing at times as much as a pint of thick, old, coagulated blood which evidently had been there for some time, unless there had been ectopic gestation, which he was inclined to believe in as the etiological explanation of many of these cases. He doubted whether any person could determine by examination of these specimens whether pregnancy had existed or not.

A MODIFICATION OF DR. POLK'S FORCEPS FOR VAGINAL HYSTERECTOMY, WITH METHOD OF OPERATING.

DR. CLEMENT CLEVELAND presented a modification of Dr. Polk's forceps for vaginal hysterectomy, with the following remarks:

The changes made in them are suggested by the method I have employed in my last few cases. They have not yet been used, but theoretically they answer the requirements they were designed to meet. To describe them so that a reason for the modification may be understood, it will be necessary to sketch the method itself, which is as follows. It is not proposed to here give a full detailed description of hysterectomy, but merely to bring out the salient points of the method. The uterus is first separated from the bladder after Schroeder's method. Then a posterior incision is made, not, as in Schroeder's method, into Douglas' pouch, but merely to the peritoneum. Then with the index finger the peritoneum is

stripped from the posterior surface of the uterus as far up as it is possible to do so, and laterally on both sides, up to the broad ligaments. In this way a large flap of peritoneum is saved, to fold down upon the opening left by the removal of the uterus; there is less raw surface for the intestines to attach themselves to, and the consequent danger of intestinal obstruction much diminished. Moreover, the utero-sacral ligaments are thus disposed of, as the utero-vesical were in front, with the minimum loss of blood and time. The anterior incision is then made continuous. The next step is to clamp the uterine arteries. Here it is necessary to describe the modification of the forceps which is required for clamping the uterine arteries when this method is employed. The first change is in the lock, which is so constructed that each blade can be applied separately, after the manner of obstetrical forceps. This lock is the same as that used in a larger forceps designed and described by me several years ago. The next change is in the blade to be applied anteriorly, which consists in prolonging it a half-inch, bringing it to a dull point like that of an aneurism needle. They are thus applied: The vagina is pushed up on either side as far as possible without tearing the vessels as they enter the uterus. The index finger is introduced through the posterior opening, and its point brought up on either side close to the body of the uterus, between the uterine and ovarian vessels; then, with the end of the finger as a guide, the pointed blade is punched through and passed to an assistant to hold. Along the finger, still held in position, the other blade is passed, and the two brought together and clamped. This secures one uterine artery. The other is then clamped in a similar manner.

The next step is to cut away the cervix from the forceps, beyond the uterine arteries, then with large curved (serrated preferable) scissors the incisions are continued, in the form of an inverted V, to within a short distance of the fundus, and the cervix, with a large, wedge-shaped portion of the body, thus cut away. The fundus is at once quickly caught with a large, sharp hook and drawn down. This is accomplished with greater ease than by any other plan, as the removal of the large wedge from the body allows the sides to come together and the collapsed fundus to glide down freely. Each uterine artery is then secured by a forceps. Here the lower blade is run along the forceps already applied to the uterine artery, through the opening made in the broad ligament, and under the ovarian artery, while the other blade passes above. Great care should be here taken that the ends of the forceps do not grasp intestine. The fundus is then cut away.

The ovarian arteries are so quickly secured, after cutting

away the cervix and the portion of the body, that very little hemorrhage follows.

The plan of first amputating the cervix has been done by others, and notably by Dr. Thomas, but I am not aware that the removal of the cervix, together with a large, wedge-shaped portion of the body, in the manner above described, has been suggested or performed by another besides myself. I wish to particularly call attention to the plan of stripping up the peritoneum from the posterior wall of the uterus instead of cutting directly into Douglas' cul-de-sac. This I have nowhere seen mentioned as an essential of the operation, and to me it is very important.

It is claimed for the method that it simplifies the process and renders possible the removal of large uteri whose extirpation could not be accomplished without resort to the suprapubic operation.

A LIGATURE CARRIER IN CASES OF VAGINAL HYSTERECTOMY.

THE PRESIDENT presented an instrument which he had devised for more easily ligating the broad ligaments in cases of vaginal hysterectomy. It was constructed on the principle of the Sims uterine repositor, the mechanism being the same. The only difference is this: the blunt, curved needle takes the place of the uterine stem. The instrument is easily taken apart and cleansed, and is therefore aseptic. It is made by the W. F. Ford Surgical Instrument Company of New York.

DR. JOSEPH G. HIRONS read a paper

ON THE THERAPEUTIC VALUE OF EXPLORATORY LAPARATOMY, WITH REPORT OF THREE CASES.¹

DR. H. C. COE thought the cases reported in the paper hardly came under what he regarded as exploratory laparotomy. He understood by exploratory laparotomy the making of a small incision for the introduction of the finger and the discovery of the condition present, then closing the wound and doing nothing further. The author, in speaking of evacuating ascitic fluid, had described a different procedure. When adhesions were separated, no matter to how slight a degree, the operation must be regarded as more than a simple exploration. Most operators had had cases in which improvement had followed the simple separation of adhesions after opening the abdomen. In some cases the patients had apparently recovered health. But where a simple incision was made, the finger was introduced for diagnostic purposes, no adhesions were broken up, and the incision was again closed, he be-

¹ See original article, page 564.

lieved that the woman remained the same as she was before, and that little or no improvement would take place from simple exposure of the abdominal contents to air. But we were likely, in searching for the adnexa, etc., to break up some adhesions; and where relief had taken place after a so-called exploratory incision, he thought it could be accounted for in this way.

DR. MUNDÉ said he had resorted to exploratory laparotomy in a number of cases, but he had not placed the same meaning upon the term that the reader of the paper seemed to do. He resorted to it simply to confirm or correct his diagnosis. In four cases of tubercular peritonitis, in which the diagnosis could not be positively made, he made exploratory puncture and introduced the fingers, allowing the ascitic fluid to escape. In three cases there was no special benefit. After the wound had readily healed the ascites soon reappeared and the patients soon succumbed. In one, the case of a young unmarried woman, the tuberculosis appeared in the formerly healthy lungs within two months, and she died promptly, having no further abdominal trouble except a very slight ascites. He had come to expect less from this procedure in cases of tuberculosis of the peritoneum than he did at one time; yet, there being no other hope, he would resort to it in similar cases where there was any doubt as to the diagnosis. In 1887 he made an exploratory incision in a case of ascites in which a definite diagnosis could not be made by palpation. The woman was not over 30; the ascites had developed rapidly; there was no cachexia. He opened the abdomen, making a rather large incision because her family physician had told him that he had tapped her once and had then found a pelvic tumor. Dr. Mundé introduced his fingers through the incision and found a papillomatous mass involving the ovaries, uterus, bladder, and rectum; and, being unable to remove it, he washed out the abdomen and closed the wound. After about four weeks the ascites had again recurred, and at the patient's request he reopened the abdomen and found the same condition as before. He then attempted with rather more force to detach the papillomatous mass, but the hemorrhage was so profuse that he was compelled to desist and to pack in gauze to check it. He left a glass drainage tube in the wound as long as any fluid escaped, perhaps for two weeks, then removed it and closed the wound. The woman made a rapid recovery, the ascites did not return, and after a year he found her still in excellent health, although the tumor could be felt, of its previous size. He did not attempt to explain the result in this case. In a case of ascites or abdominal tumor of uncertain nature, although there were a suspicion of tuberculosis or malignancy, and in which palliative or

expectant treatment proved of no avail, he would resort to exploratory laparotomy, not only for the purpose of making a positive diagnosis, but with some hope, offered by this case and the experience of other surgeons, of benefiting the patient, even should radical treatment prove impracticable.

DR. HANKS suggested that, before resorting to exploratory laparotomy, it would be well to introduce the trocar and draw off the ascitic fluid. He remembered doing that, when a younger man, on two consecutive occasions; and the patient, a man, was alive to-day. He thought the trocar should be resorted to until we knew there was a tumor, or until it was found that the fluid would continue to reaccumulate.

DR. MUNDÉ would protest against tapping. A simple incision, two inches in length, was of no consequence or danger whatever, gave far more information, and answered the purpose of drawing off the fluid better than tapping.

DR. HANKS remarked that an exploratory incision might be safe if made by members of the New York Obstetrical Society, but he felt sure that it would be safer for most practitioners to first resort to the trocar.

DR. A. P. DUDLEY said he had had some experience with laparotomy in tubercular peritonitis, not only in the female but also in the male, and he believed there was a middle ground which might be taken, according to the history of the case. If the case were in an old person, the condition would be more likely to be malignant; if in a young woman, there would much more likely be a tumor, although it might not be felt by palpation, and an exploratory incision would be preferable to tapping. The first case in which he ever made abdominal section was one in which he diagnosed rapidly developing ovarian tumor. This he removed, and in a very short time malignant disease returned on the opposite side, whereas at the time of removal of the ovarian tumor there was no evidence of disease elsewhere. It was in a young woman; yet usually in young women with rapidly forming dropsy we might expect tubercular disease. In such a case tapping might give a new lease of life, just as exploratory incision did sometimes. In young people, too, there were more cases of dropsy from pelvic irritation, the irritation having its origin in adhesions about the uterus produced by pelvic peritonitis. In such cases the previous history would be of value in diagnosis. He had himself had cases in which benefit had followed an exploratory incision, but the incision was not made solely for diagnostic purposes; he was able to make a diagnosis with sufficient certainty to justify the incision before this was made. In one case the incision was made and the diagnosis of tubercular peritonitis was made previously by his physician. Dr. Dudley was asked to and did make laparotomy, and the

man remained greatly relieved for two months, when the disease developed in the lungs and the man died. He thought the question of exploratory incision should depend upon the age of the patient and the history of the case.

DR. A. H. GOELET.—I have but little to say on this subject, except to enter my protest against this measure, which is to be regarded as the grossest form of empiricism. Such teachings are dangerous, a strong reflection upon the judgment and morality of its supporters, and will be a disgrace to our profession if countenanced. I fully recognize the advantages of exploratory laparotomy under certain conditions, but never as a therapeutic measure. To risk the life of a patient (though the risk be slight) on a chance of affording relief by merely opening the belly, and call this a therapeutic measure, is beyond the comprehension of any right-minded, conscientious man. The responsibility for this is in a great measure due to the dogmatic assertions of Mr. Tait, a man whose dogmatism leads him to the extent of saying that he knows a woman is cured when he has her diseased parts in a bottle; and if she protests and complains that she still suffers even more than before, and is not cured, he is prepared, "by these bottled specimens," to prove that she lies (*British Med. Jour.*, Jan. 24th, 1891).

I will, with your permission, read some extracts from the report of a case of exploratory laparotomy by a professor of surgery in a St. Louis college:

In treating a case of dysmenorrhea by dilatation, etc., his vigorous efforts set up an inflammatory condition in the pelvis, resulting in the formation of a tumor. He submits the patient to a laparotomy, but, finding everything matted together, closes the abdomen without doing more than destroying a few bands. He is surprised that she recovers, and is still more surprised that she is better of her former symptoms after a lapse of four months, and that the tumefaction has almost entirely subsided. He attributes this to the operation, ignoring the fact that she was let alone after the operation. Such cases are being cured every day by a conservative plan of treatment.

The moral to be drawn from this is that the general surgeon and general practitioner who are incapable of recognizing an inflammatory deposit in the pelvis, or of applying proper measures for its relief and dissipation, have no business tampering with gynecological cases.

DR. COE said that he would not advocate exploratory puncture as a therapeutic measure, but would simply speak of its results. He thought Dr. Goelet had been rather strong in his statements. He could recall a case in which he was afraid to operate through fear that the patient had malignant dis-

ease, but during his absence his assistant operated and removed a fibroid tumor of the ovary, although the patient had ascites and had been tapped several times. He had seen several cases in which he had been unnecessarily alarmed by the presence of ascites, exploratory incision showing that there was not malignant disease. But such an incision, he claimed, was not a therapeutic measure; but when it was accompanied by the evacuation of ascitic fluid or breaking up of adhesions, improvement might take place.

DR. HANKS wished to explain that he believed in making an exploratory incision when by exclusion one had made a partial diagnosis and it was evident that something more must be done than had already been done.

DR. HIRONS said the result in the cases reported was, of course, more or less accidental. In speaking of exploratory laparotomy, he had in mind the making of the incision, no tumor removed, no adhesions in particular broken up, any results under those circumstances being attributed to the exploratory procedure. In the first two cases which he had reported he was not sure whether an absolute diagnosis had been made before or not. He had copied the histories from the records, in which an absolute diagnosis was not mentioned until after the operation. In his own case he did not know that he would have performed the operation had he been able before to make a positive diagnosis. Of course he did not think any one would perform exploratory puncture simply for the possible good it might do the patient. Whatever therapeutic value might come from it would be more or less accidental.

DR. A. P. DUDLEY related the case of a woman who had discharged large quantities of water through the uterus. Several physicians were called in consultation, none of whom could make a satisfactory diagnosis as to the cause of the leakage. The woman became pregnant, but continued to lose quantities of water. In consultation with several physicians it was decided best to bring on abortion. It was thought there might be a sinus through which ascitic fluid escaped. One physician, a friend of the family, opposed abortion, so the patient carried the child to term and was delivered. But she continued to lose water, another consultation was held, and the conclusion was reached that there was intra-abdominal irritation of some kind, and laparotomy was made, and the only pathological condition found was an adhesion between the small intestine and the fimbriated extremity of the left Fallopian tube. But it had been sufficient to keep up irritation; the tube had dilated into funnel-shape; the fimbriated extremity was much larger than his thumb; the tube had acted as a funnel to collect the fluid exuded through the irritation, and

conducted it to the uterus. The leakage ceased after breaking up the adhesion and thus relieving the irritation. The case showed that exploratory incision and simple breaking up of adhesions might be sufficient to cure a patient of dropsy.

Stated Meeting, March 3d, 1891.

The Vice-President, HENRY C. COE, M.D., in the Chair.

MULTILOCULAR CYST OF THE OVARY.

DR. CLEMENT CLEVELAND presented a large multilocular cyst of the ovary from a case which gave the following history: The patient entered his service at the Woman's Hospital February 4th; she was 30 years of age, had been married twelve years, had had five children, the oldest eight and a half years, the youngest two and a half. Until a year and a half ago she had been in perfect health, being able to do a man's work on a farm. A year and a half ago she began to have a burning sensation in the lower part of the abdomen; thought the abdomen was enlarged, but was not certain of it until last June, when the growth became perceptible and continued to increase until November. There had been an almost continuous discharge of blood from the uterus for several months. There was constant headache, pain in back and abdomen, sleeplessness, and very little appetite. When Dr. C. examined her the entire abdominal cavity seemed to be occupied by a large tumor giving indistinct evidence of fluid. Several hard masses could be felt in different parts of the abdomen. Examination by the vagina showed the uterus in normal position; the sound passed in three inches. Measurements of abdomen were: circumference, forty-nine and one-third inches; ensiform cartilage to pubis, twenty and one half inches. He made a diagnosis of probable malignant ovarian tumor, which was coincided in by Dr. Hanks. Laparotomy was thought proper, and was performed February 9th. An incision four inches long was first made in the median line, when he came down upon a cyst. The patient was then turned on the side. He passed in a large trocar and canula, and evacuated about a pint of viscid fluid. He tried to pass the instrument deeper down into the tumor, but succeeded in evacuating but little more fluid. The opening in the cyst was then enlarged so as to admit the hand, the incision in the abdomen having also been enlarged to six inches. He was then enabled to break up numerous cysts within the larger one, and said that while he had seen many multilocular cysts, he had never before seen one in which the cysts were so numerous and so closely knit

together. Each cyst seemed to have a fluid peculiar to itself in color and consistence. The pedicle was secured with catgut. The other ovary contained a cyst the size and shape of a goose's egg, which he removed. The abdominal cavity was thoroughly washed out with several gallons of hot water. After being put to bed the patient began almost immediately to have a rather high temperature, running up the same night to 103° F., continuing high until the sixth day. There was no evidence of peritonitis or other inflammation. On the sixth day it occurred to him that there might be some indication for quinine, and he gave the patient three grains every three hours. The next morning the temperature had fallen to 99°, but it would immediately rise when the quinine was stopped, to fall again on its renewal. This seemed conclusive evidence of malaria. The patient was then doing well.

FIBRO ADENOMATOUS POLYPUS OF THE CERVIX UTERI.

DR. CLEVELAND presented a second specimen, which he had removed from a patient 45 years of age, who had entered his service at the hospital February 4th, giving a history of married life of twenty years, four children, the oldest 18, the youngest 12 years. She had been out of health fully ten years, complaining, she said, constantly of irritation of the bladder, for which she used various remedies and sought the aid of physicians without much benefit. Two weeks before admission she was taken with suppression of urine; sent for her doctor, who found a large tumor filling the vagina. Dr. Cleveland found the tumor filling the vagina and pelvic cavity, so that it was impossible to reach up to the cervix to determine where the tumor was attached. It seemed evident, however, that it was attached either to the vagina (a rare situation) or to the cervix. It was possible that it was a fibroid which had descended from within the uterus. The feel was that of a fibro-cyst. On puncturing it while the patient lay on her back, the legs flexed, a quantity of greenish pus gushed out through the canula. The cavity was then washed out, the tumor drawn down and cut off, the patient placed on her side, the cavity where the tumor had rested and the entire vagina were packed. She made an uneventful recovery.

Dr. George C. Freeborn had made the following report on the tumor: Case of Mrs. F., tumor of the vagina removed by Dr. Cleveland February 10th, 1891. Macroscopical examination: The tumor is a pear-shaped mass, with the stump of a pedicle at the neck of the tumor. It measures 8.5 cm. in its long diameter, 6.5 cm. in its transverse diameter. It has a smooth external surface. On longitudinal section an elongated cavity, situated to one side of the median line, is found.

The internal surface of this cyst is lined with nodular material. Several other small cysts filled with pus are also found inside of the tumor. Microscopical examination: A fibroadenomatous polypus of the cervix uteri, with glandular structures for the most part, and cysts of various sizes, the larger ones showing the lining epithelium replaced with a layer of granular tissue, their lumen being filled with pus; the smaller ones showing the epithelium still intact, but degenerated, and their lumen filled with pus. The tumor also shows large areas of edema, and at other places, especially around the cysts, small-celled infiltration. The entire surface of the tumor is covered with stratified epithelium, like that on the vaginal surface of the cervix.

Dr. Freeborn also reported on the first case as follows, which Dr. C. accidentally omitted to read: Mrs. S., in Dr. Cleveland's service. Operation February 9th. Macroscopical examination: Right ovary, multilocular cyst, so torn that no measurements can be made. Left, pear-shaped, measuring 5.5 cm. in length, 4.5 cm. in width, 3.5 cm. in thickness. Ovary on longitudinal section found reduced to two cysts, one situated at the base measuring 3.5 cm. in diameter, the walls on the surface being very thin; the one at the apex measuring 2.5 cm. in diameter, with thin walls on the surface. Tube normal.

PROOF OF TUBAL PREGNANCY AT TERM WITHOUT RUPTURE.

DR. MALCOLM McLEAN referred to the case which he reported at the meeting of December 17th, 1889, as one of tubal pregnancy removed at the twelfth month, there being every evidence that the tube had not ruptured, unless it were below where it could not be examined at the time of the operation. Some of the gentlemen present had expressed doubts as to the sac not being extraperitoneal, and as to the operator passing through the peritoneum to reach it, and one gentleman seemed to think it might have been a case of bicornate uterus. He now presented this patient in evidence of his statements made at that time, for on the anniversary of the operation he had delivered her of a child under circumstances which permitted of thorough examination of the uterus and tubes. A hernia had formed where the previous incision had been made, and only the abdominal integument separated the gravid uterus from the external world. There was thickening of the right Fallopian tube, which had been the seat of the ectopic pregnancy two years ago, and no evidence that the sac had been extraperitoneal, no evidence of bicornate uterus.

TRANSPERITONEAL HYSTERORRHAPHY.

DR. FLORIAN KRUG presented a patient on whom he had

performed transperitoneal hysterorrhaphy, and stated that on the 28th of November he read a paper before the Section on Obstetrics and Gynecology of the Academy of Medicine, in which he described this method of operating. He was unable to present more than one of the patients whose histories he then related, but could say that, with one exception (there being a good reason for this exception), the results in all had been equally good. He fixed the uterus to the abdominal wall without opening the peritoneal cavity—not in the way that Howard Kelly had done, passing the needle through the abdominal walls and uterus at the same time; nor as Canera, of Italy, and Assaky, of Bucharest, had done, cutting down to the peritoneum and sewing the uterus to the anterior walls without denuding the uterus. He further said that the operation was not called for in any case where there was disease of the ovaries and tubes. He hoped there would be no discussion regarding its use in any case where there were adhesions or disease of the tubes and ovaries. Nor was it called for in cases which could be relieved by Thure Brandt's method of massage, by a pessary, or by electricity. It was called for only in cases of perfectly movable uterus, retroflexed or prolapsed, the appendages being normal. It was meant for retroflexion, but he did not wish to discuss the point whether retroflexion was a disease or a symptom. He simply took the ground that in some cases we could not cure the patient unless we cured the retroflexion, no matter whether it were regarded as a symptom or a disease. Even the accompanying endometritis could not be cured without curing the retroflexion in some cases. It was also of value in cases of descensus or prolapsus uteri, where other plastic operations had to be performed at the same time, as its short duration did not prolong etherization injuriously.

The patient was placed in Trendelenburg's posture, which was of great importance, as it did away with a possible danger of injuring the intestine. Any one who had seen laparotomy performed with the patient in this position would realize that it was impossible to do harm to the intestine. Strictest antiseptic details were observed, the patient being prepared in the same careful manner as for laparotomy. The vagina was also thoroughly cleansed. A rather thick sound was introduced into the uterus, a catheter into the bladder, a tenaculum put into the anterior lip to control the uterus. Then the uterus was brought forward against the anterior wall; over it he made a very small incision, in lean persons not over one-half to three-quarters of an inch long, while in persons with a good deal of adipose an inch or an inch and a half might be necessary. He cut down as far as the peritoneum without opening it. Then he could feel the uterus, which was being tilted

forward by his assistant with the sound, immediately under the serosa; in some cases the uterus could almost be seen through the glistening peritoneum. He then took a needle, made like Peaslee's, embodying the Hagedorn principle, the eye being put back somewhat further than usual so as to allow of a larger cutting edge on the back of the needle. This was introduced through the entire thickness of the abdominal walls, about a quarter of an inch from the wound, down through the peritoneum to the uterus, which was scraped with the cutting edge of the needle. Having thus denuded about a square inch of the anterior surface of the uterus, he passed the needle through a sufficient thickness of tissue at the fundus, and brought it out on the opposite side at a place corresponding with the point of entrance. He then threaded the needle with a strand of silkworm gut and withdrew it. Another suture was put in the same way at a point below or above the first suture. An aseptic button could be included in the sutures to prevent them from cutting into the tissues. The entire wound was closed by these two sutures alone, which were allowed to remain *in situ* for from four to six weeks with perfect safety. The patient was kept in bed from ten to fourteen days. A pessary might be applied, but it was not necessary. In all his cases no bladder symptoms had occurred, no rise of temperature, the uterus had ever remained in its new position.

It might be said by some, if one cut down to the peritoneum, one might as well open it. He replied that there was a small percentage of deaths, even in aseptic laparatomies, which he would avoid. All he had to do was to maintain perfect asepsis of the needle and silkworm gut. Then there was no risk of hernia taking place through so small an opening.

The operation also had the advantage of brevity. It required only five to eight minutes, which was a special recommendation over Alexander's operation in cases where plastic operations were to be carried out in the same sitting, and which would require prolonged ether narcosis.

The patient presented was operated upon on the 18th of December, and others had been operated upon nine months ago, with one exception all being in the same condition, the uterus remaining up. In one case he purposely put off a plastic operation on the perineum in order to test this procedure; and the patient felt so well after the hysterorraphy that she refused further treatment.

DR. H. J. BOLDT said he had examined the patient whom Dr. Krug had presented, and had found the uterus up in the pelvis, attached to the anterior abdominal wall, and in as nearly a physiological anterior position as could be expected

from any operative procedure. If all the cases were equally good, he must think well of the procedure. Theoretically he would have supposed it would be impossible to operate through so small an incision. It was so small that it would be impossible for a hernia to occur.

DR. CLEVELAND raised the question whether scarifying the fundus of the uterus before attaching it to the abdominal walls was really necessary. He had fastened the uterus with silkworm gut or silver wire in two cases, leaving the suture in fourteen days, and the uterus remained firmly attached, although he did not scrape the fundus.

DR. W. GILL WYLIE also thought that the operation was ingenious, but he objected to any operation which attached the uterus to the abdominal wall. Where there was no disease of the tubes or ovaries, it was very rare for any case to require further treatment than that directed to the lining membrane of the uterus, the lacerated cervix, or disease in the canal leading to the uterus. But where there had been a great deal of relaxation of long standing, and tone could not be restored, it was his experience that Alexander's operation, since he had learned to do it, was perfectly satisfactory and at the same time less objectionable. It was more in harmony with the natural condition of things than the operation which attached the uterus to the abdominal wall. He believed now that any expert could perform Alexander's operation without risk. While the operation described by Dr. Krug did hold the uterus up for a time, it could not yet be said that it would prove permanent (or free from danger, for there was likelihood of wounding an intestine or getting strangulation below the adhesion). Since having learned to do Alexander's operation properly, he had not had a single failure.

DR. A. H. BUCKMASTER said he was astonished at the amount of mobility shown by the uterus in Dr. Krug's case, while at the same time it was held in position. He felt a little timid about undertaking the operation, through fear of wounding the intestine.

DR. G. M. EDEBOHLS believed that, in just the class of cases which Dr. Krug had claimed as appropriate for this operation, Alexander's, properly performed, would accomplish the same result, and in a more natural manner, in that it shortened the ligaments which were intended to hold the uterus forward. Therefore, in all uncomplicated cases of retroversion he would prefer the Alexander method. But there was one indication for the operation described by Dr. Krug, and to which attention had already been called—namely, to shorten the period of etherization when additional operations had to be performed on the perineum, cervix, and anterior vaginal wall at the same sitting, as was necessary in certain cases of retroversion

and prolapsus. He had resorted to Dr. Krug's procedure in one such case with much satisfaction.

DR. W. M. POLK thought that, since Dr. Krug cut down to the peritoneum, the additional danger from air entering the cavity if the peritoneum were incised was not great, scarcely equal to the danger of including a portion of the omentum or intestine in the ligature if an incision were not made. He agreed with those who expressed a preference for the Alexander operation, and added that it was more successful, however, in cases of retroversion than in those of retroflexion. He had just seen one of his patients on whom he had performed this operation three or four years ago, and while she was in a measure relieved, yet the flexion had not been corrected. She was now pregnant. But in retroversion he regarded the Alexander operation as perfect as any which had yet been devised.

DR. KRUG, replying to Dr. Cleveland's question whether it was necessary to denude the surface of the uterus, replied emphatically, yes. Howard Kelly had given up his method of fixing the uterus without an incision or denudation, because it failed to adhere permanently, as he had stated in the *AM. JOURNAL OF OBSTETRICS*. But where a laparotomy was performed at the same time, and the pelvic organs were handled more or less, the uterus might adhere to the anterior wall if fixed there without denudation, for the reason that more adhesive inflammation would take place than where the abdomen was not opened. Where the abdomen was not opened, to denude the fundus was a very important factor in the operation. While he knew that Alexander's operation would answer the purpose in many cases, yet he had seen a number in which the result had not been satisfactory. He now had one patient under his care on whom Alexander's operation had been performed by some surgeon and the patient discharged cured, yet he proposed to resort to his own procedure, as the retroversion had recurred. He had already mentioned the much greater brevity of the procedure which he had described.

DR. CLEVELAND explained that in both of his cases in which the uterus had remained attached to the anterior abdominal wall where it had been fixed without denudation, the uterine appendages were removed. This might account for the permanency of the result.

SPECIMENS FROM TWO CASES OF TUBAL PREGNANCY.

DR. H. J. BOLDT presented specimens which were taken from two cases of tubal pregnancy which had recently come under observation. One of the specimens had been examined by Dr. Adams, pathologist to the Society; the other, although

not yet examined by the pathologist, contained the embryo. Both patients were 33 years old. In one case the diagnosis of tubal pregnancy had been made; but before the patient could be operated upon the tube ruptured. She was already in the hospital. He found the abdomen full of blood, the patient being in collapse. He did not search for the escaped embryo. The patient made an excellent recovery. In the second case, of which the embryo was presented, there was also rupture, and the patient made a good recovery after the operation.

Speaking in general of the diagnosis of ectopic pregnancy, Dr. Boldt said that if a patient passed her period, then began to have peculiar chocolate-brown blood escape from the uterus, continuing a number of days, perhaps weeks, accompanied by more or less pain, sometimes pain of a colicky kind, a tumor on one side of the uterus, the body of the organ slightly enlarged and somewhat softened, he would not hesitate to diagnosticate ectopic pregnancy. Of course the diagnosis would be more positive if a distinct decidua had passed. Under those circumstances he would not waste time with electricity, but would operate at once.

LARGE FIBROID OF THE UTERUS; HYSTERECTOMY.

Dr. Boldt presented this specimen as illustrating the advantage of Trendelenburg's posture in laparotomy. The patient was 47 years old; had for six weeks been suffering from intense pain, both direct and reflex, due to pressure of a large fibroid crowded in the true pelvis. The patient complained of pain in the upper extremities, in the neck, of shortness of breath, and palpitation. Notwithstanding the large size of the fibroid and its pressure within the pelvis, yet the operation presented little difficulty with the patient in Trendelenburg's posture, whereby the intestines were caused to descend toward the diaphragm and pressure in the pelvis was relieved. There was practically no hemorrhage. The patient was doing well.

SPONTANEOUS RUPTURE OF THE UTERUS DURING LABOR; EXPLORATIVE LAPARATOMY; DEATH FROM SHOCK.

Dr. H. C. Coe exhibited a specimen of ruptured uterus, with the following history: At the last meeting I presented a ruptured uterus which I had removed entire by laparotomy a few days before, the lesion having been complicated by prolapse and gangrene of the intestine. A week later I encountered in my service at Maternity Hospital, New York, the fourth case which I had seen within seventeen months. In each the lesion was different, as was the indication for treat-

ment after performing laparotomy. The patient from whom the present specimen was obtained was a strong Irishwoman, 29 years of age, pregnant for the fourth time. Former labors normal. Pelvic measurements normal. Labor began on February 22d at 1 A.M., but the pains were not severe until eight hours later, when she was brought to the delivery room. The os was slightly dilated and a bilateral laceration of the cervix was recognized. The pains were slight and irregular, and ceased entirely during the afternoon. Her pulse in the morning was 110, but later it was 120 and weak. Milk punches were given during the day. In the evening the membranes ruptured and a large quantity of liquor amnii escaped, the cervix being then about three-quarters dilated, with the head not engaged. The uterine contractions now became more active, the head engaged and began to descend, carrying before it the edematous anterior lip of the cervix. Position of vertex, R. O. P., with imperfect flexion. The head was arrested in the middle of the pelvis until 1 A.M. (February 23d), when severe bearing-down pains began and the child was rapidly delivered, the forehead first engaging and the occiput sweeping over the perineum. The child, which was still-born, weighed ten pounds and seven ounces, and had a large caput succedaneum covering the anterior half of the right parietal bone. Placenta expressed; no post-partum hemorrhage, the uterus contracting firmly. A drachm of ergot was given. The patient felt weak, her pulse being 115, but conversed cheerfully. She was removed to the ward after the usual interval and placed in charge of a special nurse, who reported that she passed a restless night, sleeping at intervals, with a pulse of 110. At 6 A.M., five hours after delivery, the nurse noticed that the patient's pulse was almost imperceptible, and sent for the house surgeon, who found her in collapse, with rapid breathing, cyanosis, a cold, clammy skin, and thready pulse. The uterus was contracted, and the fundus appeared to be tilted over to the right side, but there was no external hemorrhage. Hypodermic injections of whiskey, digitalis, and strophanthus were given, with rectal enemata, and the patient rallied, her pulse being 140, but an hour and a half later falling to 120, with forty respirations to the minute. She was very restless, but quite conscious, and complained of great thirst. By 9:30 A.M. she had reacted well and was able to take beef juice and stimulants by the mouth. At 10:30 her pulse was 120, temperature 100° , respirations 40. I had not been notified, but happened to visit the hospital at 11 A.M. One glance at the patient was enough to convince me that she was in all probability suffering from internal hemorrhage. As the uterus was fairly contracted, there was no external bleeding, and a history of a

prolonged first stage, with great depression attending and following the labor, the suspicion that there was a serious lesion of the uterus was entertained. Only a hasty vaginal examination was possible, on account of the resistance of the patient and the fear of increasing the existing shock. I found a deep laceration on the left side of the cervix, extending upward into the body of the uterus. As there was no visible hemorrhage, I did not introduce a tampon, but called a consultation of the attending staff and ordered stimulants, with hypodermics of camphorated oil (one to four), directing that the patient should be prepared for laparotomy. At 1 P.M. she was in fair condition, with a pulse of 116. At 2 P.M. Drs. Murray, Grandin, and Hance saw the patient with me and agreed with the diagnosis of rupture of the uterus into the left broad ligament. Whether the tear had extended into the peritoneal cavity or not was not clear; the hand introduced through the rent entered a large cavity filled with blood clots, but which appeared to be extraperitoneal. The patient's condition was desperate, there was every evidence of internal bleeding, and it seemed unjustifiable to merely tampon the uterus and allow her to die without an attempt to discover the exact nature of the lesion and to check the hemorrhage by forceps or ligature. Laparotomy was performed, with the able assistance of my colleagues, the patient being in Trendelenburg's posture. Owing to the excessive edema of the parietal peritoneum, it was identified and opened with considerable difficulty. The uterus was lifted out of the wound, and it was found that there was an enormous hematocele of the left broad ligament, the blood having extended beneath the peritoneum in front of the uterus and upward into the iliac fossa. There was no blood within Douglas' pouch. Further interference was contra-indicated, the wound was rapidly closed, and the patient died just as the operation was completed. I removed post mortem the accompanying specimen, which is of more than ordinary interest as illustrating certain points which were raised at the discussion of this same subject two weeks ago. Although the tear extends obliquely upward from the cervix, it did not start from an old laceration, since there still exists a bridge of tissue completing the os externum. Evidently the tear began in the inferior segment of the uterus and extended in both directions, upward into the broad ligament and downward into the portio vaginalis. The lesion must have occurred during the first stage of labor, due to the long pressure of the large, extended head. This is borne out by the history of the case—the alarming condition of the patient during the second stage and after delivery. The absence of external hemorrhage was remarkable, consid-

ering the amount of extraperitoneal effusion. I am unable to explain why the blood should have forced its way in the direction of greatest resistance, except on the hypothesis that the contraction of the uterus, which was maintained for several hours after delivery, partially closed the tear in the uterine wall, while bleeding was constantly going on from the lacerated vessels of the broad ligament. The blood clot which plugged the opening also served as an effectual bar against the escape of blood externally. That the hemorrhage was progressive was shown both by the subsequent collapse of the patient and the size of the hematoma formed on opening the abdomen.

A word as to the diagnosis of the condition. A failure to recognize the lesion during and after delivery would have been pardonable, even for an expert, in view of the long labor, the weak state of the patient throughout, her fair condition afterwards, with the fact that the uterus contracted well and that there was no external hemorrhage. When she collapsed five hours later, however, suspicions ought to have been at once aroused. There was little doubt in my own mind as to the existing condition, even before I made a vaginal examination. Pulmonary embolus, heart failure, concealed hemorrhage, and rupture of the uterus were the only accidents to be considered. The former was rendered probable by the dyspnea, the latter by the history of inefficient uterine contractions, and heart failure might have been inferred from the condition of the pulse throughout labor. But pulmonary embolus would not have caused such extreme pallor and such a thready pulse; for pure heart failure there seemed to be no satisfactory cause, and there could be no concealed intra-uterine hemorrhage with a contracted uterus. Internal bleeding offered the only explanation, and how could that happen except as the result of the lesion which was subsequently found to exist? As to the question of treatment, I suppose that if the laceration had been discovered immediately after delivery the introduction of a proper tampon might have checked the bleeding and saved the patient, though she might have succumbed subsequently to the prolonged suppuration which would have attended the healing process. When I saw her there was no hope of accomplishing anything by palliative treatment. Was I justified in performing laparotomy? Desperate cases require heroic treatment. Although an avowed conservative as regards elective operations, in the face of such accidents as those which I have narrated I seldom hesitate. Intraperitoneal hemorrhage resulting from the laceration of viscera can only be reached by laparotomy, whether it is due to ruptured tubal pregnancy, to rupture of the uterus, or to gunshot wounds of the abdomen. The

patient may die under the operation, but there is always a chance that she may recover, while without operative interference death is inevitable. As I was in doubt as to the extent of the lesion, had every reason to believe that hemorrhage was going on into the peritoneal cavity, and was certain that my patient would die unless something was done, I believe that I was justified in opening the abdomen, even though it was only to be confronted with the fact that there was no intraperitoneal hemorrhage and that the operation was fruitless. We learn more from our unsuccessful than from our successful laparatomies; and if we shrink from the responsibility of operating under such unfavorable circumstances as those just described, we shall never have the satisfaction of snatching a woman from certain death by a heroic procedure which may have seemed at the time unjustifiable.

DR. G. M. EDEBOHLS presented two specimens which he considered of interest in connection with the question of the treatment of uterine fibromata by electricity.

The first specimen was one of

ADENO-EPITHELIOMA OF BOTH OVARIES CO-EXISTING WITH UTERINE FIBROMA,

and was obtained by laparotomy from a single woman of 45, who had been sent to him by her family physician with a written request to continue a course of electrical treatment initiated and carried on for several months past, but without effect, by the family physician. In the note a preference was expressed for electro-puncture.

The patient was anemic and cachectic in appearance, and gave a history of severe pelvic pains and pressure symptoms for eight months past. She had no abnormal hemorrhages; on the contrary, she had lost no blood for three months, and supposed herself to have reached the menopause.

On examination, a fibroma eight centimetres in diameter, occupying the posterior wall of body and cervix, was found immovably impacted in the pelvis. In addition to this the appendages were found considerably enlarged and tender to pressure on either side. Exploratory puncture of the left appendages yielded bloody serum.

Disease of the appendages having been thus established, electricity was held to be contra-indicated, and laparotomy was performed. The left appendages were easily secured. On the right side, however, the neoplasm had infiltrated the peritoneum and subperitoneal tissues of the posterior pelvic wall. In removing it from this region the right ureter was laid bare for three centimetres of its length and alarming hemorrhage occurred. After the operation patient sank into

a condition of marasmus, with a tendency to subnormal pulse and temperature, and died in marantic coma on the ninth day.

Dr. Eugene Hodenpyl kindly examined the specimen and reported it as colloid adeno-epithelioma of both ovaries, involving the tubes. He regarded it as a good example of malignant disease engrafted upon ordinary cyst-adenoma.

There was no doubt in the mind of Dr. Edebohls that had the indications been properly met and laparotomy performed six months earlier, the result would have been vastly different. As it was, the golden opportunity passed by unseized while electricity was being employed, and the patient came to the operating table too weak to rally from the operation.

The second specimen presented by Dr. Edebohls was a

UTERUS CONTAINING IN ITS WALLS TWO GANGRENOUS FIBROMATA,

removed together with the tubes and ovaries by abdominal panhysterectomy (Freund's operation).

The history of the case was as follows: A. K., single, 30 years of age, teacher, had menstruated regularly, three to four days every four weeks, with rather profuse flow, until December 1st, 1889. Since May, 1889, she had had occasional pains in the right groin, to which, however, she had given little attention. On January 1st, 1890, a uterine hemorrhage came on, which continued uninterruptedly for the next six weeks, when her physician placed her under Dr. Edebohls' care. Severe colicky pains accompanied the flow.

On examination a uterine tumor was found reaching to the umbilicus. The average diameter of the tumor was gauged at seventeen to eighteen centimetres. The tumor was made up of the enlarged uterus containing in its anterior wall two fibromata, one ten and the other five centimetres in diameter. Hymen intact; os thickened and patulous; uterine cavity eleven centimetres deep; appendages normal.

Dr. Edebohls considered the case a proper one for treatment by electricity. From February 15th to May 21st, a period of ninety-five days, twenty-eight applications of the galvanic current were made. Full antiseptic precautions were used, the vagina and the uterine cavity being irrigated with sublimate solution, 1 : 3,000, before and after each application. On account of the tendency to hemorrhage, the positive pole was always used within the uterus; the negative, in the form of a large clay electrode, upon the abdomen. The duration of each treatment varied between five and fifteen minutes, according as a stronger or a milder current was employed. The strength of the current varied between twenty-

five and seventy-five milliamperes. In citing the case during a discussion before the Section on Obstetrics of the Academy of Medicine, Dr. Edebohls had stated that he had employed up to one hundred and seventy-five milliamperes. Since then he had ascertained that this statement was based upon a false reading of the Barrett milliamperemeter which he then employed. He had since obtained a Gaiffe meter, and by placing the two, the Barrett and the Gaiffe, in the same circuit, he found that when the former registered one hundred and seventy-five milliamperes, the latter indicated but seventy-five milliamperes. By further comparisons with standard instruments (Weston's) he found that his Gaiffe meter was absolutely correct.

After five or six applications the hemorrhage was practically under control; after a few further applications the pains also ceased. When the course of electrical treatment was completed, the uterine tumor was found to have been reduced one-half in size, with complete relief of pain, hemorrhage, and pressure symptoms. The result was satisfactory to both patient and physician, and treatment was discontinued.

Ten days later Dr. Edebohls was summoned to see the patient, and found her suffering from an attack of acute serous pelvic peritonitis, Douglas' sac being distended to its utmost capacity. The symptoms were severe; pulse 130, temperature $103\frac{1}{2}^{\circ}$; but after two weeks the serous exudation was absorbed, the patient was convalescent, and the doctor discontinued his visits.

A week later he was again summoned, and found his patient in a mildly septic condition, with a slight evening rise of temperature, and a fetid vaginal discharge which led to the diagnosis of putrefactive changes within the uterine cavity and probable necrobiosis of the fibroid.

An attempt was made to remove the source of sepsis by repeatedly curetting away whatever was semi-free in the uterine cavity, and frequent douching of the latter. In spite of this, the septicemia deepened, a bedsore developed, and it became evident that the patient's only chance consisted in a total removal of the source of sepsis. Total extirpation of the uterus was decided upon and performed on June 19th, 1890.

After careful douching of uterus with antiseptic solutions, carbolized gauze was packed into the cervix and the latter closed by suture. The vagina was now thoroughly disinfected and the abdomen was opened. A few slight adhesions were the only indications of the recent peritonitis. The broad ligaments were clamped on either side by Polk's forceps passed up from the vagina and adjusted by the hand within the abdomen. The uterus was cut out as a whole

between them, the perfectly normal tubes and ovaries being separately tied off and removed. Very little blood was lost; the operation, however, proved difficult and tedious, nearly two hours being consumed. The patient never rallied from shock, and died fourteen hours after operation.

The specimens presented consisted of the uterus enlarged to an average diameter of twelve to thirteen centimetres, and two normal tubes and ovaries. Two interstitial fibromata, gangrenous in their totality, occupied the thickened anterior wall. The uterine tissue in the neighborhood of the sloughing tumors was infiltrated with pus. The endometrium formed a whitish-gray, necrosed tissue lining the cavity of the uterus like a diphtheritic membrane.

The question arose in the mind of Dr. Edebohls: Did the use of electricity lead to this condition, or was it a natural and predestined event in the life history of these two particular fibromata? He could not help but lean to the former supposition, which was strengthened by a parallel and nearly identical experience which occurred to him at about the same time. A young woman of 27 came to him May 7th, 1890, for operation for a uterine fibroma reaching to within five centimetres of the umbilicus. She gave the usual history of hemorrhages, pain, and pressure symptoms. For two months before coming under Dr. Edebohls' care she had been treated by electricity. She was in good condition for operation, except that she had become a confirmed morphine eater, and as Dr. Edebohls refused to entertain operative interference unless the patient abandoned the habit, she passed out of his hands on May 11th. On June 3d, 1890, the uterus was removed *in toto* by abdominal section, by one of our most skilful operators, a Fellow of this Society. Dr. Edebohls witnessed the operation, which was performed for a vital indication, the patient being profoundly septic at the time of operation, the sepsis originating from a sloughing fibroma of the uterus. On opening the latter a sloughing, extremely offensive fibroma was found in its cavity. The patient died on the next day.

In both cases sloughing of the fibroma, sepsis, operation, and death followed, within the month, the last application of electricity. Dr. Edebohls would not attempt to go into the subject of the manner in which electricity might lead to necrosis of uterine fibromata, except to state that he was inclined to attribute great importance to the effect of the galvanic current in producing contraction of the hypertrophied uterine muscle, thus interfering with the nutritive supply and leading to starvation of the tumors.

FIBROID TUMORS OF THE UTERUS.

DR. W. GILL WYLIE presented fibroid tumors removed by suprapubic hysterectomy in several cases. He said that while, in cases of cystic tumors, almost all questions had been settled, yet in cases of fibroids it was still a question whether we should try electricity. These cases had some bearing on that question. The first was that of a woman who had suffered for some time with a tumor, but only recently had called in a physician, who was able, he thought, to detect a fibroid complicated by some cystic tumor. Dr. Hanks was called in consultation, and expressed the opinion that the case was one favorable for electricity; but soon afterward, and before electricity had been tried, the temperature rose and Dr. Wylie was called. He found a fibroid, and the supposed cyst was a distended tube. He removed the appendages, tumor, and uterus. It was evident, he thought, that if electricity had been used it would have resulted badly.

The next case occurred in a woman, about 53 years of age, who had suffered from uterine trouble for years. It was known that she had some kind of a tumor. Her suffering was principally from a feeling of prolapsus about the rectum, which nothing would relieve except some kind of support. Finally, in order to give relief, it became necessary to pack the vagina firmly with cotton pledgets. She said she had worn seventy-five different kinds of pessaries, had been to all the prominent gynecologists in the country, and two men in New York had recommended different kinds of supports and said that an operation might be done, but that it would be too dangerous. Dr. Wylie first saw her several months ago, and found two very hard tumors, the uterus mainly to the left side, while the vagina was enormously distended from much packing with cotton. She was bedridden, and lay constantly with this pledget support in the vagina. He saw her again, when the tumors seemed to have increased in size. There were some signs of inflammatory trouble on one side. Recognizing no other means of relief, he suggested opening the abdomen, which he did. He found it easy to lift up the whole mass after separating very dense adhesions covering the tumors, and removed the uterus with the tumors, which proved to be fibroids which were almost purely calcareous. The patient was doing quite well. He remarked that electricity, in his opinion, would not have been useful in that case.

The third case was one sent him by a physician with the request that an operation be performed. The larger fibroid, about the size of his two fists, was pressing down upon the rectum, causing in this way a good deal of trouble. The

patient was very much constipated and somewhat incapacitated for work. Dr. Wylie's brother, Dr. R. H. Wylie, who had made considerable use of electricity, tried this agent in the present case for a year, and the patient seemed somewhat benefited, some of the tumors decreasing in size, the others not being influenced. The patient finally expressed a desire for an operation, which Dr. Wylie performed, removing the tumors and uterus. The specimen seemed to show that the tumors situated highest had received the full force of the electricity, while those below had received very little.

The next case was of interest, he said, as having received electricity a whole year without benefit. The patient had suffered extreme pelvic pain nearly all the time, and was for several years a complete wreck. He found the uterus nodular, containing several small fibroids, extremely sensitive, and on the left was a tumor as large as a small orange. Having received no benefit from the use of electricity for a year, she decided to submit to an operation. On opening the abdomen and lifting the adhesions, which were extreme all over the pelvis, he found the left tube and ovary involved in adhesions, a cyst as big as an orange in the ovary, containing blood and gummy pigment which was about ready to break through and cause peritonitis. There was some local peritonitis at the time of the operation. On the other side there were adhesions, but no cysts. He removed the fibroids with the uterus and appendages. The specimen was, he said, exceedingly interesting as illustrating typical cases of marked fibroid changes in the ovaries. It was a question as to what was the nature of such hard nodules on the ovaries. He had found them not infrequently associated with fibroid tumors, this being the second or third specimen which he had removed the present winter. Almost always such patients suffered from a great deal of local pain, especially in the ovarian region, and from marked reflex symptoms.

All of the cases related made a good recovery. The speaker added that the more one saw of fibroids the more he became impressed by the fact that the tumors themselves gave rise to few symptoms. The majority of patients who came to the physician came for two reasons. First, complications in the form of inflammatory trouble about the uterus, tubes, and ovaries. Women with fibroids were more likely to have such inflammatory troubles than were others, and when they did get up an endometritis it was nearly always of an obstinate type, especially if the fibroid were within the uterus or its walls. The second reason was simply that they had very large tumors, and for that reason the great majority of cases who came for treatment were unsuitable for trial by electricity. He said trial, because he thought it had hardly been

proven that electricity was curative of fibroids, except as a destructive agent. It often caused rapid degenerative changes in large tumors, and not infrequently resulted in inflammation, suppuration, etc.

DR. A. H. GOELET said, with regard to Dr. Edebohls' remarks about the variations between different meters, that he had endeavored to get the meter manufacturers in this country to decide upon a uniform standard of measure, as he had found that no two makers' instruments agreed. He used three meters in his office constantly, and did this so as to secure correctness of measurements. He would say that he had managed to get all the manufacturers except two to agree upon a uniform standard.

DR. BUCKMASTER expressed surprise that anybody should, after all that had been written on electrical treatment of fibroids, express the opinion that what was accomplished was by a destructive process. He thought that one who entertained that view could not give the method a fair trial. He would like to know how many cases Dr. Wylie had treated by this method which would enable him to make such a broad generalization.

DR. WYLIE replied that he had treated a considerable number of cases the past two or three years, and Dr. R. H. Wylie had treated thirty or forty cases, making use of instruments and the methods employed by Dr. Apostoli, under whom he had studied.

DR. GOELET remarked that men came to the meetings to tell the truth, and he did not believe any one would claim to have succeeded with electricity unless he had, nor that any one would claim to have failed with its use unless it was true. The fact, however, that many were obtaining success with this agent proved conclusively that, with those who do not succeed, there must be something wrong, either in the selection of their cases for treatment or in their method of application, or they have not been sufficiently painstaking or persistent. It was noticeable that those who did not succeed were recognized as exclusive operators, and, in many of their cases, applied electricity only because the patient demanded it. Regarding the cases presented this evening, they had happened not to be suitable for electrical treatment.

DR. POLK said that the case of rupture of the uterus reported by Dr. Coe was almost identical in its history with one which he had related before the Society. The patient had been in the hands of a midwife, was brought to Bellevue Hospital, where extraction was effected by decapitation and evisceration. The woman lived about as long afterward as did Dr. Coe's patient, and the after-history was very nearly

the same, so that he could say the operative procedure in Dr. C.'s case, judging by his own, did not add anything to the risks which the patient ran. In his case there was that same effusion of blood into the broad ligament, into the iliac fossa, and beneath the colon all the way up to the diaphragm. But all the blood lost was not sufficient to account for death, which he attributed to shock. It seemed to him of great importance to study the cases carefully before taking any remedial step, and determine, if possible, the location of the rent. He saw no objection to introducing the hand into the vagina and carrying the finger as quickly as one could into the cavity. He thought it would not add much to the shock. In cases of lateral tear, where one could be sure the peritoneal cavity had not been opened into, he thought that all one could do was to pack outside the uterus—not in the uterus, for the blood was coming from the uterine artery, not from the placental site. If that would not relieve the patient, he did not think anything would be gained by opening the abdomen and attempting to ligate there. The vagina was large, and one could ligate from that direction if it were necessary.

DR. BOLDT said that in a case which he saw ten years ago the tear was lateral, there was little hemorrhage, very little external, and death, he thought, was due to shock.

DR. MALCOLM McLEAN said that a case which he reported about four years ago gave about the same history as Dr. Coe's. The hemorrhage had taken place into the broad ligament on the right side, forming a large tumor alongside the uterus. From the fact that the child had been extracted by him by version, and that he was able to extract the amniotic sac from the cavity of the uterus unbroken—except, of course, where the child had passed through it—he felt satisfied that the cavity into which the tear led had not been invaded by any of the impurities from the uterus, that it contained only pure blood from the line of the rent; therefore he did nothing but keep the woman quiet and give her stimulants. She got well, and subsequently had another child at term. The case showed that a patient could recover when a considerable amount of blood escaped into the broad ligament, dissecting up along the abdominal parietes, in his case causing ecchymoses, apparent beneath the integument up to the ribs on both sides. He impressed the fact that where the amniotic sac could be extracted whole through the natural passages, it was sufficient proof that the false cavity had not been infected, and made it safer to leave the case to nature rather than to perform laparotomy.

DR. COE said that in his case the delivery was effected spontaneously, the placenta was expressed without trouble, yet collapse came on five or six hours afterward. Those facts

left him in doubt as to what was going on. It was a desperate case, and it seemed best to operate. Had he been called earlier, undoubtedly he would have tamponed.

COLLOID SARCOMA OF THE LEFT OVARY WEIGHING NEARLY
THIRTY POUNDS.

DR. FLORIAN KRUG presented the specimen, which he had removed from a woman aged 31. The tumor had grown to the weight of about thirty pounds within one year, weighing one-third as much as the patient. As death was but a question of a short time, the patient was willing to take the chance afforded by an operation. She died on the fifth day. Autopsy revealed an old endocarditis and fresh pericarditis.

A PLEA FOR THE EXTRAPERITONEAL OPERATION FOR VENTRAL
HERNIA, WITH CASE.¹

DR. G. M. EDEBOHLS read the paper.

DR. WYLIE said he had felt considerable interest in the paper, since it dealt with a subject which he had made a study of several years ago when it had received, he thought, too little attention. He sewed up three or four herniæ or more every year, and very recently had closed a very large one. But the recommendation in the paper would prove impractical in the large majority of cases, for the reason that they were usually of long standing and the walls had become much thinned out. Several years ago he performed the operation of cutting down over a hernia not larger than a lemon, dissecting out the fascia without opening the peritoneum, and sewing up with catgut, getting a good result; but in the vast majority of cases it was necessary, in order to obtain anything like good union, to take away peritoneum. It was of the greatest importance to remember, when operating for abdominal tumors, that the fascia forming the linea alba should be brought into exact coaptation, so that union could take place between the same structures on the two sides. He had not had a hernia for three or four years, whereas before he had learned to take this precaution he would have had a number. The important point was to place in exact apposition the strong fascia forming the linea alba. The muscles were longitudinal and had no transverse strength. Formerly when a large drainage tube was used it was the starting point for the hernia, but at present it was customary to use a small one. The operation on the hernia was more difficult on fat women, as it was difficult to find the ragged edges of the torn fascia and bring them in exact apposition. It was of

¹ See original article, page 544.

advantage to diet the patient for a time and get rid of some of the tension. A bandage should be worn three or four months, but if union were then obtained it would be of no further use. The idea of obtaining a strong scar by inflammatory adhesion was a false one, for the scar would atrophy and the benefit disappear in a few years or sooner.

DR. H. MARION SIMS agreed with Dr. Wylie regarding the necessity for obtaining fascial union. Having heard Dr. Wylie speak on the subject three or four years ago, he had since then followed his advice, and consequently had been troubled no longer by the occurrence of hernia after operations. He brought the fascia together when closing the abdomen, as nearly as it was possible to do. Reference had been made to the case in which he operated for hernia some years ago, it being the first one of the kind in this country; consequently the procedure was a difficult one, especially as the patient was very fat. Since then he had operated on six cases, the last one twelve days ago. He had been able to keep track of five of the cases. He saw the first case a month ago. Union remained firm, and there had been no return of the hernia. Two others were operated upon three years ago, one one year ago, the result remaining perfect. The last one occurred in a patient on whom he performed suprapubic hysterectomy for fibroid tumor three years ago, and he had found that hernia was more likely to occur after this operation. In the last case it was difficult to find the several structures, and the case was complicated by adhesion of the intestine in the hernial ring and of a portion of the omentum which had to be removed. The peritoneum was then brought together with catgut, the fascia and muscles united separately, while the fat was left open to granulate. The patient was very fleshy. Iodoform gauze being inserted between the fatty edges of the wound caused granulations and a strong scar.

DR. POLK said that in the case to which Dr. Edebohls had referred, and on which he operated at Bellevue Hospital in 1887, the result was very good, as the records of the hospital would show. He thought the distinction which Dr. Edebohls had made with regard to the kind of hernia which should be treated by this method was very important. He understood the author to say that the operation was to be undertaken only when the hernia had not attained a great size, and before adhesions had taken place between the intestine and omentum and the scar. The fascia, or upper sheath, could better be gotten at before entering the peritoneal cavity than afterward. Unquestionably at the commencement of the case one could go down and find these structures and unite them and get a good result. The trouble with old herniæ was that the peritoneum, having been stretched, would not retract.

DR. EDEBOHLS said he had impressed the necessity for uniting fascia to fascia, as well as muscle to muscle, in the paper. He said there was no necessity for entering the peritoneum in non-strangulated herniæ where the intestine could be reduced with the sac. He had learned, through the discussion, that a much larger number of cases of ventral hernia had been operated upon than he would have supposed on looking over the literature.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, January 16th, 1891.

The President, DR. W. W. JAGGARD, in the Chair.

DR. L. L. McARTHUR read a paper on

CANCER OF THE RECTUM.¹

DR. C. T. PARKES.—The case as presented by Dr. McArthur is very interesting to me, and I think he is to be complimented on the skilful attention he has given to this patient and the success which has resulted from his interference. It seems to me we must look upon this operation for the relief of this terrible disease mainly as a palliative treatment; it is seldom curative. Certainly it removes the manifestations of the disease for a time, and, above all, is desirable, as Dr. McArthur has said, from the fact that it relieves the patient from the local distress caused by the disease, especially from pain which is present in all these cases, and the symptoms of on-coming obstruction which accompany the later stages. My experience with it has been rather moderate; as I recall the cases I have met, there come to mind *nine* cases in which operation has been done for excision of the rectum, two cases in which simple incision was done, and two cases which are interesting from the fact that they accompanied the presence of ovarian tumors, and one case which was situated very high in the rectum and no interference was practised—in all, fourteen. Of the nine cases in which excision was done, five were operated upon according to the plan of Kraske; in the others success was attained in the removal of the manifestations of the disease by merely external incision of the soft parts, without interference with the sacrum or coccyx.

¹ See original article, page 567.

Of these cases, which represent a period of work of eight or ten years, some are living to-day, but most of them are dead. None of the cases of excision were preceded by an opening into the colon. I think the statistics which the doctor gives as to the mortality of the disease as the result of immediate excision are based upon the results of pre-antiseptic days rather than the present. I am not one of those who believe that the contact of fecal matter with the wound is at all times hurtful, as I have had in my experience many cases in which wounds have been bathed in fecal matter without any septic condition following.

I can see readily enough that the previous operation for an artificial anus can be a benefit to these cases, and will likely predispose to the earlier and more rapid healing of the rectal wound, simply because it prevents the fecal material from passing over the raw surface. The operation of forming an artificial anus in itself is of little consequence, and should be, as a rule, attended with little fatality. That it is a necessary procedure I am not inclined to believe; neither do I think that it makes very much difference in the mortality. As far as the relief given, in preventing the discharge from coming over the wound, is concerned, I have to agree with Dr. McArthur's statements.

The disposition in all these cases is to a comparatively rapid return of the disease. We must always remember, in the treatment of cancer here as well as elsewhere, that the operation itself may stimulate or produce infection. In two cases in which the operation was done by myself, there followed no local manifestations of return of the disease, but within eighteen months there appeared to be general infection of the entire body, as shown by evidence of disease in the liver and in the lung, and the presence of cancerous nodules of different sizes in the integument.

There is no question but that every one of these patients will be grateful to the surgeon for the removal of the manifestations of this disease; but, as I said before, we must look at it in the true light and tell these patients that the relief is only temporary and cannot often be curative where the disease is really cancerous in its nature. Again, we must bear in mind that quite a number of surgeons of great experience, men who have seen this disease in all its conditions and ravages, believe that the establishment of an artificial anus itself is a sufficient relief to the case. Dr. Thomas Bryant, of London, is not an advocate of excision, but is an advocate of an artificial anus and relieving the patient entirely of the necessity for using the diseased portion of the bowel for the transmission of fecal matter, and thereby allaying inflammation.

Again, we must remember that other operations are done besides excision of the rectum, which is a formidable operation and leaves disgusting results in many cases. Some other operations have been done which surgeons of experience believe to be efficacious; these are local in character—that is, the complete division of the mass backward towards the sacrum, in that way providing for the easy exit of the fecal matter. Of course the era of operative procedure is upon us, and particularly is this operation advocated by European surgeons, and also very largely by American surgeons; but I think if all the cases were examined as carefully as those cases have been which Dr. McArthur has presented to us to-night, and discussed as coolly and calmly as he has discussed them, none of us would be very much in favor of promising a great deal for the operation.

DR. HENRY T. BYFORD.—I would like to emphasize what Dr. Parkes has said, that this is a palliative operation and not justifiable when it is immediately very dangerous to the life of the patient. The case related was very interesting to me, because it is similar to a case which I have treated, and which illustrates the principle which should be carried out in treating cancer of the rectum in women. In this case the sphincter was not involved, although the rectum from about two and a half inches above down nearly to the sphincter was affected on its anterior and lateral aspect. I removed portions of the lateral and anterior rectal walls, and the posterior vaginal wall. Instead of drawing the parts together in front of the rectum, I operated upon the principle that all raw tissue not covered by mucous membrane will contract and obliterate the entire tract within it; so I endeavored to secure as large a surface of mucous membrane for the canal as possible by leaving the vagina open and merely closing up the vaginal entrance. There is another reason for removing, in cancer of the rectum, all of the rectum that we can, viz., that a return of the disease in connective tissue is not as painful as when it attacks the viscera. In this case the patient was able to evacuate the bowels until the entire pelvis was filled up with a mass of carcinomatous tissue, without very much pain. She died finally of exhaustion more than anything else. The point in all these cases is to get as much mucous membrane as possible, using the vagina the same as in any other operation.

DR. McARTHUR, in closing the discussion, said: In presenting the patient this evening I did not do so to advocate such an operation, although it does seem to me that, in cases in the female in which carcinoma occurs low down in the rectum, in reality it would be a procedure more advisable than to make an artificial anus at one side of the tip of the coc-

cyx, because of the statement of the patient that she knew when the bowels desired to move. She has a peculiar feeling, she says, and the power to expel the contents, thus escaping the exceedingly distressing symptoms of involuntary discharges, which always occur with an artificial anus at other points. In regard to the statistics which I quoted as collected by Kelsey, in the article which he wrote on this subject for the "Reference Hand-Book of Medical Sciences," published in 1886, he stated that the mortality from the operation of excision was thirty-three per cent. In Sajous' *Annual* for 1890, there is a collection of statistics after Kraske's operation, and the mortality is stated at fifty per cent. Kelsey happens also to be a contributor to this department of Sajous' *Annual*, so the mortality has rather increased than decreased for the last year, according to the same man's statistics. He bases this fifty per cent mortality on seven cases done by Kraske himself, three by Schönborn, one by Rinne, and the remainder by Lauenstein, twelve in all, in which six died as the result of the operation; some by septic peritonitis (two), some by sepsis (two), and some from exhaustion.

As Dr. Parkes says, there are a large number of surgeons who advocate simply making a colostomy and interfering to no further extent with the case. In some excellent statistics collected by Cripps, we find that out of cases which he watched personally in London hospitals and studied carefully, life was lengthened on the average from seventeen months to twenty-two months—that is, there were five and a half months added to the longevity by simply making a colostomy; which shows that it is decidedly advantageous. Colostomy, I believe, will aid in lowering the mortality in cases of excision, whether done for pain or for obstruction. As to the operation being of dubious value, there is much to be said on both sides; there are, however, some well-recorded cases in which the operation having been performed at an early day, the life of the patient has been preserved. One case was living in 1886 that had been living for seven years since the operation, and no return was to be seen, and five cases in which no return was seen in two years.

It has impressed me that some of the gynecologists of the Society would comment upon the probability of endometritis, with infection through the uterine canal and tubes, as being very likely to occur in such a procedure, as was exhibited in my patient, and I would like to ask the President whether such an inflammation would be probable in a woman who had passed the menopause.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, April 25th, 1890.

DR. D. W. PRENTISS, *Vice-President, in the Chair.*

DR. A. F. A. KING read the paper of the evening, on

HYSTERIA.¹

DR. PRENTISS, in opening the discussion, said that Dr. King had gone over the subject so thoroughly that little was left to say. He had had the experience of most physicians in meeting and treating cases of hysteria, but had never studied the subject exhaustively. Definitions of this disease vary. He recently found a definition which, though short, seemed to cover the conditions—viz.: (1) Cannot. (2) Will not. (3) Cannot will. The first impression given is, they are unable to help themselves; then one is led to believe that they will not; finally it is evident that they have not the will power.

Dr. King very wisely dealt with only one variety of this affection. One author says that he thinks hysteria has no more to do with the uterus than gout has to do with the beard on a man's face. But there are other causes than those which Dr. King has mentioned, the most important being environments, the living under unnatural conditions.

Dr. King referred to it as a gregarious disease. How do we know this is so? May they not have these attacks when alone? No one sees them, and, as the speaker says, they never refer to such attacks from shame; so it may be that they do occur in solitude.

He believed total unconsciousness occurred in some cases, and referred to a case seen by Dr. Edes with him, in which sudden attacks of syncope, lasting but a moment or two, would come on while conversing, in which both he and Dr. Edes thought her totally unconscious. This same patient had slight paralysis of the left leg with anesthesia, which suddenly disappeared after a fright from a threatened fire in the house; this upholds Dr. King's idea of self-preservation. He cited another case in which the patient was in

¹ See original article, page 513.

extreme danger, but she did not move, though she made certain arrangements in case of death, which she thought imminent.

Treatment.—Marriage very often ends these attacks. He considered narcotics and stimulants as injurious, as they rarely relieve pain and are certainly very dangerous. The action of antispasmodics is merely temporary. The best treatment is gymnastic training of muscles and mind, with massage, etc.

DR. EDES spoke of the many forms of hysteria and the various phases they presented. He said he did not agree with the speaker in regard to the greater prevalence of the affection among the luxurious; in his experience it occurred oftener among those who were occupied. The idea presented was not a new one, but he had never heard it set forth with so much eloquence and poetry.

DR. H. L. E. JOHNSON asked, if hysteria be caused by the lack of sexual gratification, how do we account for hysteria among prostitutes, which is very common? He found that among them it was generally due to a debauch or a quarrel, etc. He spoke of the treatment by fright, and referred to several cases so treated in which the hysterical fit was abruptly ended.

DR. MILLER, of West Virginia, gave a short synopsis of the symptoms from which the patient operated upon by Dr. Johnson suffered. She began to fail two years ago. She did not go to bed at night, but for the last five or six months had slept on her knees, with the lower part of her abdomen pressed against a sofa; in this was her only relief.

DR. KING said he had nothing to say in closing, except to thank the gentlemen for the manner in which they received the paper.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, January 7th, 1891.

A. L. GALABIN, M.D., F.R.C.P., *President, in the Chair.*

Specimens.—DR. PHILLIPS: Genital Organs from a fatal case of Purpura Hemorrhagica. DR. DAKIN: Tubercular Uterus and Appendages. DR. HAYES: (1) Distended Fallopian Tubes; (2) Fibroid Polypi.

ON REMOVAL OF THE UTERINE APPENDAGES IN CASES OF
FUNCTIONAL NEUROSIS.

DR. PLAYFAIR read a paper on this subject, in which he detailed several cases that had come under his observation.

1. A case of neurosis treated by removal of the appendages, without benefit, subsequently cured by systematic treatment.

2. A similar case in which the operation was recommended, and about to be performed, when the patient refused her consent, likewise cured by systematic treatment.

3. A case of neurosis in which there was distinct evidence of structural disease of the appendages. In this instance the neurotic symptoms were first dealt with, in the hope that the patient would be sufficiently bettered to avoid the necessity of operation.

4. The subject of hystero-epilepsy and mania treated by removal of the uterine appendages is considered, and an illustrative case given.

The general conclusions arrived at are :

1. That the removal of the appendages is not a legitimate procedure in cases of purely functional neurosis.

2. That when marked structural disease of the appendages co-exists with severe neurotic conditions, the latter should be treated in the first instance, in the hope that operation may be avoided.

3. That in hystero-epilepsy and hystero-mania the results of operation have been so unsatisfactory that it is a procedure of very doubtful expediency and not to be recommended.

SIR SPENCER WELLS referred to a pamphlet by Dr. Ross, of Toronto, on "The Failure of the Removal of the Tubes and Ovaries to Relieve Symptoms." He says: "To operate on organs not diseased, for the relief of indefinable pain symptoms, hysterical symptoms, cataleptic symptoms, epileptic symptoms, is, to my mind, unjustifiable. A craze seems to have taken hold of the profession. The axiom seems to have become, if a woman has indefinite pains and local symptoms, take out her ovaries. This axiom requires a radical change." Dr. Ross goes on to say: "I have seen these unjustifiable operations done both in Europe and America. . . . Many cases in which ovaries and tubes are removed to relieve certain nervous symptoms remain unrelieved. . . . Many cases I hear of as cures are not cures. . . . From our many failures to remove nervous diseases, as hysteria and epilepsy, by castration, we can see that the ovaries play but a part in their causation, and I believe that we might as well hope for relief of these diseases by enucleation of both eyes as by removal of both ovaries, or

both tubes, or both tubes and ovaries, or even tubes, ovaries, and uterus." Dr. Ross related a case where he removed the ovaries in 1886. In 1888 he was able to report that his patient had been in splendid health ever since operation, but in 1890 had to say her mental condition is not what it was before. She seems lazy, indolent, and fat, and is not the bright little woman she was before the operation, even when she had her aches and pains. Sexual intercourse is only indulged in as a marital duty. It gives neither pain nor pleasure. Then Dr. Ross proceeded: "Many deaths from these operations have been recorded. . . . A girl's prospect of marriage, maternity, and a happy life are blasted forever by such a procedure." He then referred to a case where a lady of his acquaintance was operated on at Birmingham, and her case was brought before the Gynecological Society in December, 1888—very soon after the operation—as a practical cure. He (Sir Spencer Wells) had seen that lady to-day. She had never been well since the operation, but very much worse than before, and her case, instead of being a cure, was a deplorable and disastrous failure. He had seen other cases almost as discreditable. He fully concurred in all that Dr. Playfair and Dr. Ross had said against unnecessary and unjustifiable mutilation for transitory disease.

DR. PRIESTLEY referred to the debate on the subject at the International Medical Congress held in Copenhagen six years ago. The preponderance of the best opinion was adverse to operation. His own experience was not favorable to it. It was not free from danger, and was not easy. Nor did it cure, proving that severe ovarian pain without disease is but the expression of a general neurosis. The proposal to remove the uterine appendages arose really from mistaken diagnosis, and was comparable to treating as the real ailment the pain in the knee associated with hip joint disease in children, or the pain in the calf of the leg so often experienced by women who are the subjects of phlegmasia dolens. It was well known that neurotic cases often got better spontaneously. Alteration of surroundings, an engagement to marry, or other occurrence was sufficient. Dr. Priestley said that neuralgia of the testicle was not treated by castration, therefore why was castration performed in women? He referred to the remark of the late Dr. Matthews Duncan about the dangerous precedent of allowing a patient to decide upon an operation. He contended that these cases were best treated by medical and moral treatment, as recommended by Dr. Weir Mitchell. He would lay it down as a rule that the appendages should only be removed when there was distinct local disease ascertainable by examination; and he would put still some further limit to this, for it was well known that both ovaries and

tubes might be considerably enlarged and yet return to their natural size without operation. In those formidable diseases, mania and epilepsy, he did not venture to give an opinion.

DR. LEWIS said he agreed with the first and third conclusions of Dr. Playfair, but in the second he should be influenced by the interpretation to be put on the word *marked*. If it signified organically and permanently affected, then he failed to see any object in hesitating at operation, unless the local conditions gave rise to no symptoms of importance. But if it meant only a condition which came within the limits of what was curable, then certainly systematic treatment should be tried before any idea of operation was entertained. He believed systematic treatment combined with massage was often of real value, not only in curing the general neurotic condition, but the local malady.

DR. HORROCKS said it was necessary to remember that a functional neurosis was a complaint without an organic lesion to account for the symptoms. It was always difficult to prove a universal negative. Hence when a woman complained of pain in the ovarian region, it was not easy to say that she had no disease in the pelvis to account for such pain. If no disease could be found, and yet the patient complained persistently of pain and distress, which remained unrelieved by systematic treatment, it became a question whether it was not justifiable to open the abdomen and examine the pelvic viscera, with the object of discovering, if possible, the source of the pain and removing it. In such a case, if the ovaries and tubes were found to be healthy, ought they not to be dropped back into the pelvis and let alone? He mentioned a case, now in Guy's under his own care, which had been treated twelve months without benefit. She was waiting to have abdominal section performed to relieve her ovarian pain, although on careful examination no disease could be found in the pelvis. He did not think that healthy ovaries and tubes should be removed in cases of true functional neurosis.

MR. ALBAN DORAN said there was a great difference between the removal of the appendages for disease and their removal for a neurosis. In the first case, even when the patient might have recovered without operation, structures absolutely diseased were removed, the ligatured pedicles remaining as relatively small sources of irritation. In the removal of the appendages for neurosis, structures only assumedly morbid were cut away, whilst the ligatured pedicles remained as definite sources of irritation in these neurotic patients. Some believed the induction of the menopause cured the neurosis. But the menopause was always more or less of a shock, and a premature menopause was a still greater shock.

DR. HEYWOOD SMITH said that in his experience many cases

had been entirely relieved from intense neurosis of the ovaries by their removal. He mentioned a case of intermittent melancholia cured by removal of the uterine appendages. One ovary was beginning to undergo cystic degeneration.

DR. HAYES thought neurotic symptoms were not usually present where there was disease of the appendages; and even if they were present, they were not relieved by removing the diseased appendages. Where these organs were diseased they should be removed for other reasons. He was led to believe that patients often submitted to these operations in order to escape from the inconveniences of menstruation and child-bearing.

DR. PLAYFAIR, in reply, said Dr. Heywood Smith had misunderstood him. His paper was not written with the view of opposing operation in suitable cases of structural diseases, which he himself constantly practised, but to show its inefficiency in cases of purely functional nervous break-down. He could only repeat his conviction that these cases had generally nothing to do with the reproductive organs. In mixed cases, operation should follow, not precede, the attempt to cure the neurotic symptoms.

Annual Meeting, Wednesday, February 4th, 1891.

The President, DR. GALABIN, in the Chair.

After the election of officers, and of Professor Tarnier as Honorary Foreign Fellow, and the reading of the annual reports, the retiring president, Dr. Galabin, delivered the annual address, in which he paid a graceful tribute to the memory of Dr. Matthews Duncan. The address was followed by a discussion on the question of registration of midwives. Dr. Aveling proposed "that the Fellows approve the policy pursued by this Society for the last twenty years relating to midwives, and respectfully request the council to continue their efforts to obtain for these women suitable education and legal registration." This was seconded by Dr. Griffith and carried almost unanimously.

REVIEW.

TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. Vol. III. Pp. 375; 23 full-page plates and illustrations. Philadelphia: Wm. J. Doran, 1891.

This is a most excellent volume and contains nearly forty papers of high average excellence. Many of these we have already published in abstract (pages 1229 to 1285, 1890), and of the remainder we would call especial attention to that of Kellogg on "The Value of Exercise as a Therapeutic Means in the Treatment of the Pelvic Diseases of Women." In this he shows most conclusively the evil consequences of improper dress and neglected muscular development, and the great and lasting benefit to be derived from the proper training of the muscles and the discarding of tight bands and corsets.

ABSTRACTS.

1. LUYS, J.: OBSTETRICAL ANESTHESIA BY HYPNOTISM (*Jour. de Méd. de Paris*, December 21st, 1890).—Dr. Luys and other physicians have tried hypnotism as a means of dulling the pains of labor. It is necessary to prepare the patient by beginning two months before the labor to hypnotize her, so that at the time the patient can be easily placed under the influence. Luys reports three cases which he treated in this manner, and at the time of delivery the woman felt no pain.

G. P.

2. MICHAUX: CARCINOMA IN THE CICATRIX OF AN ABDOMINAL INCISION MADE FOR AN OVARIOTOMY.—In the *Bulletin Médical* of December 28th, 1890, is published a report of the Société de Chirurgie, before which this question was discussed.

M. Michaux reported a case of a woman, age 63, who four years before had been operated upon for cyst of the ovary. In the line of the abdominal incision there appeared several small patches of carcinoma, and in the centre of the umbilicus a neoplastic mass a little larger, hard and painful. There was an enlarged lymphatic in the groin. M. Michaux advanced the hypothesis that during the removal of the cyst, which had been accomplished with considerable difficulty, there had probably been a contact of the growth with the lips of the wound. Be that as it may, it is of interest to note

the locality of the recurrence, and also that the cyst was supposed to be benign.

M. Routier remarked that in the month of September he removed a voluminous sarcoma of the ovary. Although difficult, there was nothing remarkable in the operation. The wound healed by first intention. In two weeks two small vegetating tumors appeared in the line of the cicatrix, which were destroyed with the thermo-cautery. Since then there has been pain in the region of the kidneys, which probably indicates a generalization of the disease.

M. Terillon cited two cases of removal of gelatinous cysts, apparently benign, which were followed shortly after by tumors of the epiploön. He thought these cases would go to prove that simple gelatinous cysts, apparently benign, were capable of giving rise to tumors, particularly of the epiploön.

M. Championnière cited a case of removal of a large tube, cystic and hemorrhagic, which six months later was followed by a tumor in the abdominal wall.

M. Bouilly also instanced a case of a cyst and fibroid which he had removed. The patient made a good recovery, but three months later ascites appeared, a hard tumor could be felt in the epiploön, the disease became general, and the patient cachectic and succumbed. It is difficult to say whether the lesion in the epiploön was primary or came from an inoculation during the operation.

M. Julien said that he did not believe that cystic tumors of the ovary which recur were of any particular species. It was impossible to tell from the histological examination whether the tumors would produce the inoculations or not.

The whole discussion is one of importance and interest, and is awakening much attention among the French and Italians. The question to be solved is whether the original tumor, supposed to be benign, is really malignant, and the tumors which reappear are secondary, or whether they are due to inoculation.

GRACE PECKHAM.

NOTE.

LEOPOLD'S statistics of mortality after vaginal hysterectomy, noted by DIMIRI (on page 383 in the March number of this journal) at sixty per cent, should be but six per cent—a remarkable showing, one which few will ever surpass, and which reflects the greatest credit on this skilled operator, both for the perfection of his technique and the judgment shown in the selection of the cases.

THE AMERICAN JOURNAL OF OBSTETRICS

AND
DISEASES OF WOMEN AND CHILDREN.

VOL. XXIV. JUNE, 1891. No. 6.

ORIGINAL COMMUNICATIONS.

ELEVATION OF TEMPERATURE OF OBSCURE ORIGIN
DURING THE PUERPERIUM.¹

BY
HENRY C. COE, M.D.,
New York.

IN these days of rigid aseptic midwifery we naturally view with suspicion every case of post-partum fever as an indication of some fault in the accoucheur. The conscientious obstetrician, as well as the conscientious surgeon, will first search for flaws in his own technique before seeking for extraneous causes for the elevation of temperature. So strongly has the *septic* origin of fever during the puerperal state been emphasized by weighty authorities, and so generally has the focus of infection been declared to be located in the uterus, that we are in danger of forgetting that it is possible to have fever which is not due to infection during or after confinement. I believe that the specialist is more liable than the general

¹Read at a meeting of the New York Clinical Society, February 27th, 1891.

practitioner to lose sight of the fact that the puerperium offers no immunity against febrile affections of every sort; those whose attention is habitually directed towards the pelvis are apt to forget that it is only an integral part of the whole body. Writers on obstetrics, while recognizing the fact that the pregnant woman is liable to such complications, lay but little stress on the development of general affections immediately after labor, at a time when they are most apt to be confounded with local conditions. Again, it must be evident to the thoughtful observer that a pre-existing latent pelvic inflammation may be lighted up in consequence of the traumatism incident upon the sudden emptying of the uterus, independent of fresh septic infection received at the time of labor. To doubt this is to reject the evidence of both the operating room and the autopsy table. In short, the point which I wish to emphasize in this short paper is that septic infection through the genital tract is not the only cause of puerperal fever. In order to limit the discussion, I have selected a class of doubtful cases in which puerperal infection was assumed to exist until, after long and careful observation, it was probably excluded. I say "probably," because we must all admit that our knowledge is still imperfect.

CASE I.—Ipara, æt. 21. First labor, four years ago, was easy. Had a retroversion afterward, which was cured after wearing a pessary. History of two attacks of localized pelvic inflammation, the exact character of which is unknown. I first saw her early in October, she being then at the end of the seventh month of pregnancy. She had travelled abroad during the summer, and had had a severe fall, striking upon her right side, after which she had occasional pain in the right inguinal region. She consulted Winckel in Munich, who examined her with negative results. The day after her arrival in New York (early in September) she had a chill and rise of temperature to 103° , with evidences of localized peritonitis to the right of the uterus. Dr. S. Marx attended her and sent for me, but I was out of town and did not see her until a month later. He stated that the attack lasted about a week, and was attended by extreme tympanites and colicky pains in the bowels. During the last three months of pregnancy she enjoyed good health, though she still had occasional

pain in the right ovarian region. I inferred that she had either congestion of the ovary or old perimetritic adhesions. Examination negative. Bowels regular; general condition excellent. I examined her a week before her confinement and diagnosed hydramnios. She was confined January 11th, 1890. Labor easy and normal. I made only two vaginal examinations, under strict aseptic precautions, the child being born an hour after I entered the house. There was a large amount of liquor amnii. Placenta and membranes expressed easily, and found to be intact. Vaginal douche of bichloride, 1 to 5000; occlusion dressing to vulva. During the day the patient suffered with severe after-pains and headache, which was relieved by phenacetin. She complained of pain in the right leg, but, as she is naturally exceedingly nervous, this was not regarded as an important symptom. Pulse and temperature normal. The next morning she felt comfortable, but her abdomen was slightly distended, her tongue being coated. Ordered calomel, tablet trit., gr. ss. every hour up to six doses, to be followed by saline laxative. At 4 P.M. she had a well-marked rigor, with a rise of temperature to 105.5° , the pulse being 120. She complained of severe pain in the right iliac region and tympanites. As I was engaged at an operation, Dr. Marx saw her and gave turpentine enemata, which caused the passage of some gas and a few scybala. Lochia scanty, but inodorous. He removed a few clots from the vagina and ordered a vaginal douche of bichloride, 1 to 4000. Phenacetin, gr. x., was given, and the temperature dropped in two hours to 100° , pulse 96. A second dose of salts was ineffectual. The normal lochia returned during the night.

I made a careful vaginal examination at night, which was negative, except that I felt a peculiar cord at the base of the left broad ligament; this I subsequently took to be a thrombosed vein, which opinion was confirmed at the time of operation. Uterus well contracted, os patulous, no tenderness on either side; breasts normal. The next morning the temperature was 103.2° , pulse 96. Patient in good general condition, but abdomen greatly distended and generally sensitive, especially in the right groin, where nothing could be felt on deep pressure. Lochia scanty, no odor. I introduced my finger into the uterus, and removed some dry inodorous clots. Hot

stupes were ordered, to promote flow and relieve pain. Intra-uterine injection, 1 to 4000, removed a few shreds. Castor oil, $\bar{3}$ ij., was given; without result. The patient was placed in the knee-chest position and high enemata were administered. These induced a small clay-colored movement, with the escape of a considerable amount of gas. The temperature at once began to fall, and I naturally felt as if I had found the cause of the trouble. Uterine cavity irrigated as before. Lochia still scanty. I came in the evening prepared to curette, if necessary, but found the temperature normal. The next morning it was 100° , and at night 102° , the pulse being 96. The tympanites had entirely disappeared, but the patient now had a sharp attack of diarrhea, the stools being light yellow, with a very offensive odor. The lochia were still scanty. Two or three intra-uterine injections of boiled water were given, in order to eliminate possible bichloride irritation. They had no effect on the temperature, and were finally discontinued. Lochia returned, bright red and without odor. Uterus well contracted, in normal position, and insensitive. No induration could be felt in either broad ligament. Spleen enlarged. Decided tenderness in right iliac fossa, and nowhere else. Patient remembered that she had had epistaxis a few days before confinement. One or two suspicious rose spots on the abdomen.

Fourth day: Morning temperature 101° . Fifteen to twenty fluid movements during the day. Salol gr. v., bis. subnit. gr. xxx., alternately every two hours. No pain, but tenderness in right iliac fossa. Caput coli can be distinctly mapped out, but no induration can be felt. Evening temperature 103.2° , pulse 90. Diagnosis doubtful between septic enterocolitis and typhoid.

Fifth day: Morning temperature 102° , pulse 84. Diarrhea only partially controlled by hypodermics of Magendie, π x., every four hours. Takes abundant nourishment, and generally condition good. Dr. Janeway saw the patient in consultation, and could not make a diagnosis. He thought that it might be typhoid. Perityphlitis seemed to be improbable. Lochia slight, but normal. Absolutely no pelvic symptoms or evidences of local trouble. Evening temperature 102.5° , pulse 108. Diarrhea continued all day in spite of

salol, bismuth and opium in large doses. No pain with movements. Tenderness over caput coli, without induration.

Sixth day: Condition unchanged.

Seventh day: Temperature at 10 A.M. 100.4° , pulse 96. Patient feels quite comfortable, and diarrhea somewhat checked. Evacuations still yellow, fluid, and very offensive, although she had taken during the preceding three days salol 3 iij., and bismuth subnit. 3 ij. Slight tenderness on deep pressure, and gurgling in right iliac region. Doubtful rose spots. Temperature and pulse at 3 P.M. normal, and patient felt and looked perfectly well. Diarrhea eventually checked by ferri subsulph., gr. ij. every four hours.

For eight days she had a normal pulse and temperature, except that on two or three occasions the latter rose to 99.5° at night. I would state that quinine was tried thoroughly, twenty grains at noon and ten at night, without any influence on the temperature; also Warburg's tincture and Fowler's solution. Malaria was absolutely excluded. Pelvic examination negative. Still tenderness on deep pressure over caput coli, but no dulness or induration. Patient allowed to sit up in bed. Eating well and bowels regular.

From the sixteenth to the nineteenth day I noted a slight evening rise ($100^{\circ}+$), without being able to discover any cause for it. Patient feeling well and without any pain. On the nineteenth day the evening temperature was 100.6° . During the night she had a severe attack of intestinal colic with tympanites, as at the outset of her illness, the pain radiating from the right groin and extending down the leg. I had originally explained this pain as due to old intestinal adhesions, with ovarian and tubal disease of long standing, but had abandoned this theory because of the entire disappearance of abdominal symptoms for a week.

Twentieth day: Evening temperature 101° , pulse 96. Bowels moved without pain. Localized pain and tenderness in right iliac region. Nothing to be felt on percussion, by palpation, or by the bimanual. Blister over tender spot. Cough, with pain in left side. Slight dulness below scapula, with bronchial râles on both sides.

Twenty-second day: Evening temperature 103.5° , pulse 100. Administered phenacetin, gr. x., and the temperature

dropped in two hours to 99.5° , with profuse sweating. Cough, free expectoration, general moist râles. No pain.

Twenty-third day: Temperature at 11:30 A.M. 103.5° , pulse 100. Phenacetin, gr. v.; temperature dropped to 100° at 1:30 P.M. Profuse perspiration, and pulse quite weak. Strophanthus, π v., every four hours. Temperature at 5 P.M. 99.5° , pulse 90. On deep pressure an elongated mass can be felt in the ileo-cecal region. It apparently lies behind the gut, and cannot be reached per vaginam. Tenderness forbids careful examination. Pain radiates down the inner side of the thigh. Dr. Janeway saw the patient again, and was unable to make a positive diagnosis, but thought that the induration seemed to extend downward along the upper border of the broad ligament. Possibly a perityphlitic abscess which had ruptured into the bowel, causing the septic diarrhea. Abscess of the tube or ovary considered, but rejected for want of positive evidence and negative vaginal examination. Evening temperature 102.5° , pulse 108. Patient comfortable and in good condition. Takes plenty of nourishment and stimulants. Bowels move without pain.

Twenty-third day: At 4 A.M. temperature 99.8° , pulse 84. At 8:30 A.M. temperature 103° , pulse 96. At 9:30 severe chill (the second since the onset of the fever), with a rise to 105.1° , pulse 128. Phenacetin, gr. ijss., given and repeated in an hour, as even five grains seemed to cause great depression. Temperature at 1:30 P.M. 100.5° , pulse 98. At 10 P.M. temperature 98° without further medication, and general condition excellent.

Twenty-fourth day: Temperature normal up to 5 A.M., when it began to rise, reaching 100.6° at 9 A.M., pulse 112 and weak. Nourishment by mouth stopped on account of nausea, and nutrient enemata substituted. Dr. Lange saw the patient with us at this time and made a diagnosis of probable perityphlitis. There was now a well-marked, elongated induration, three inches in length, extending from a point an inch below and two inches inside the anterior superior spine, downward and inward toward the spine of the pubes. Very tender on deep pressure, but no fluctuation. Vaginal and rectal examinations negative. Operation advised, but to be delayed until the following day. But about 1 o'clock the

patient had a severe chill, the temperature rising to 105° , with a pulse of 120 to 130, so that perforation was feared. Temperature reduced after giving phenacetin, and general condition improved by stimulation, so that Dr. Lange was able to operate at 5 P.M. Operation lasted two hours, under chloroform anesthesia. An incision was made directly over the mass, and the peritoneum was opened. Fortunately the general cavity was thoroughly shut off by adhesions. Intestinal adhesions were separated and an abscess-sac containing 3 i. of fetid pus was enucleated. Small foci among the intestines were broken up and irrigated. The sac was firmly adherent to the cecum, and was naturally supposed to be the appendix, but proved to be the ovary. The abscess cavity was of long standing, as shown by its thick wall. The distal end of the corresponding tube was removed; it was pervious and only congested. A long and careful search for the appendix was unsuccessful, so that its condition remains unknown. A large thrombosed vein was followed from the vicinity of the abscess downward and backward to the pelvic wall. The pelvic and abdominal cavities were entirely shut off by adherent coils of gut, which were not disturbed. Irrigation; gauze drainage. In spite of what she had already undergone, the patient rallied well, the temperature fell to 100° , and the bowels were moved at the usual time without difficulty. Pain and tenderness disappeared within a week after the operation. There have been some slight fluctuations due to stitch-abscesses, but she is now (end of third week) ready to sit up, her bowels are regular, and she is absolutely free from localized pain, although the presence of intestinal adhesions is still proved by the recurrence of the former tympanites.

I leave the explanation of this remarkable case to you. Neither the gentlemen who saw the case in consultation nor myself could trace a direct causal relation between parturition and the anatomical condition found at the operation. Was there a pre-existing abscess with old intestinal adhesions, and recurrent inflammatory trouble of septic or traumatic origin following labor? Such is my opinion, judging from a careful review of the history and an examination of the specimen. Was the diarrhea due to the rupture of the abscess into the bowel, or might primary sepsis in the bowel have been trans-

mitted to the adherent ovary? Was the infection transmitted along the tube from the uterine cavity or through the lymphatics? Finally, was there, after all, an appendicitis, and does a focus of future trouble still remain? These and other interesting questions will occur to you, which I have not time to discuss, my purpose being simply to illustrate the subject of obscure febrile complications during the puerperium. [The patient made a perfect recovery and is now in excellent health. Nothing abnormal can be detected in the pelvis.]

CASE II.—A strong, healthy primipara, *æt.* 24, was under my observation from the third month of pregnancy. No history of malaria, but the neighborhood in which she lived was not above suspicion. Labor six hours, entirely normal. No laceration of perineum. Placenta and membranes expressed entire, strict aseptic precautions being observed throughout. Bowels regular. Evening temperature on the sixth day 100° . No explanation could be found. Lactation normal; no pelvic complication; lochia normal. The next evening the temperature was $100^{\circ}+$, pulse 96. Patient feeling perfectly well.

On the eighth day, at 7 A.M., chill, with rise to 105° (axilla). The temperature dropped in an hour to 103° under antipyrin, gr. xxx. No tenderness in or around uterus. Lochia not offensive. Irrigation with solution of carbolic. Two hours later severe rigor, with rise to 106.6° , pulse 140. Patient delirious. Having excluded, as I thought, trouble *outside* of the uterus, I believed that I had to deal with intra-uterine sepsis. I placed the patient on the side and curetted thoroughly, removing a moderate amount of *débris* without an offensive odor. Cervix and vagina carefully examined for lesions, but none were found. Washed out uterus, using two quarts of carbolic solution. Temperature fell rapidly, nearly reaching normal in three hours. Dr. Morrill saw the patient with me in the afternoon, when we found her in a serious condition, the temperature being down, but the pulse 132 and weak. Ordered *inf. digitalis* every four hours, with stimulants. The next morning she had another chill, the fever reaching 105.2° . Irrigation and antipyrin as before, without marked result, the temperature dropping gradually in the course of nine hours to 99.8° (5 P.M.). At 5:30 P.M. she had a severe rigor, half an hour after which the thermometer in

the axilla registered 106.6° , the pulse being 140. I again used the curette, but the uterine cavity was empty, save for a few inodorous shreds. Irrigation. At 10 P.M. the temperature had fallen to normal, where it remained for nearly twenty-four hours, when it gradually rose to 103° without a preceding chill. Forty grains of quinine were given, in doses of gr. x. every six hours, during the day, and the uterus was washed out with bichloride solution three times without apparent effect on the fever. The next morning the temperature was again normal. During the next twenty-four hours fifty grains of quinine were given in divided doses, at the end of which time the temperature was 104° (at 7 A.M. on the twelfth day), but there were no more chills, and the patient felt remarkably well. At noon it fell to normal, began to rise at 2 P.M., and reached 103° at 8:30 P.M. Antipyrin had no effect upon it. On the thirteenth day I gave twenty grains of quinine at noon and twenty at midnight, and continued the antiperiodic use of the drug in decreasing doses for several days. The temperature never rose above 99° after that day, and the patient was up and about in the fourth week. She had no serious local trouble referable to the confinement, became pregnant again within a few months. I have since confined her twice, without complications, and she is quite well to-day.

I reported this case at the Obstetrical Society four years ago, and the opinions were as various as the speakers. Some thought that it was puerperal malaria, some septic endometritis, one pyemia. I was commended for my vigorous local treatment, though I myself now regard it as "meddlesome midwifery," as there were no indications and I could not see that it had any direct effect upon the temperature. The suspicion of malaria seemed to be well founded. A recent number of this JOURNAL¹ contains the report of a somewhat similar case, reported at a meeting of the Washington Gynecological Society, with the usual diversity of opinions regarding the etiology.

I could multiply examples of these obscure forms of puerperal elevation of temperature, but I would only weary you without adding any more emphasis to the point which I desire to render prominent—that we may theorize learnedly

¹ Vol. xxiv., 1891, page 62 et seq.

in societies about the cause of the fever, but at the bedside the best of us are often compelled to acknowledge that there are limits to our diagnostic acumen. This conclusion has been repeatedly forced upon me by meeting in consultation those whom we rightly regard as our teachers in the obstetric art. I never finish a service at Maternity Hospital without meeting with just such cases as those under consideration, in which, with the first rise of temperature on the fifth or sixth day, suspicion is directed to the pelvis. The genital tract is carefully examined; lesions are sought for in the vagina and cervix; vaginal douches, intra-uterine injections, and curetting are employed without results. There is no tenderness around the uterus, the breasts are normal, and we are finally forced to the conclusion that the seat of the trouble is elsewhere. Sometimes it will turn out to be pulmonary—perhaps an acute phthisis which was overlooked in the waiting-wards—sometimes malaria, or it will be found that the bowels have not been moved for several days, so that the patient is really in a condition of intestinal sapremia, so to speak. Once an acute pyelitis developed just before delivery and gave me no little anxiety afterward; and an acute cystitis may cause a temporary elevation of temperature. When we come to private practice the situation is entirely different. I know of no class of cases in the whole range of medicine which cause the attendant such uneasiness as those of puerperal fever—using the term in its broad sense. I have certainly never felt half so much anxiety with regard to the result of a desperate laparotomy as I have when a puerperal patient developed symptoms which might be attributed to septic infection, perhaps referable to some omission or commission of my own. I dread these cases all the more because I have not yet learned to invariably locate the focus of trouble, within or outside of the uterus—and, to tell the truth, I have sometimes received little aid from the eminent gentlemen whom I have met in consultation. The simple question, “Is this septic endometritis or peri-uterine inflammation?” will often floor the most learned writer on puerperal septicemia. The diagnosis being so uncertain, what shall we say of the treatment? Shall we, because the patient has a chill, high temperature, and suppression of the lochia, infer that

the trouble is within the uterus, and proceed at once to irrigate or curette the cavity? Is the absence of fetor an evidence that there is no septic endometritis, and the absence of localized pain and tenderness a proof that no peri-uterine inflammation is present? Every accoucheur of extended experience must reply in the negative.

Let me cite a case in which the facts are corroborated by no less an authority than Dr. Janeway. A woman was delivered with forceps before a class of students. Within twelve hours she had a chill and fever, with every evidence of local infection. Local treatment was unavailing. No doubt as to the diagnosis of septic endometritis was felt. She grew rapidly worse, developed typhoid symptoms, and died in about ten days. At the autopsy typical typhoid ulcers were found, the pelvic organs being normal. Dr. Janeway informs me that several similar cases have been under his observation, in which typhoid developed before or immediately after delivery, and was masked by the puerperal state. Although thoroughly convinced of the propriety of curetting the uterus in cases of undoubted septic endometritis due to retention of debris, I cannot entirely agree with Dr. Grandin as to the harmless nature of the procedure. In the first case which I have reported it might have done much harm; in the second it certainly did no good. I am inclined to give intra-uterine injections a fair trial first. About three weeks ago I saw in consultation a case of puerperal endometritis with sloughing of the cervix. I curetted the uterine cavity, removing a quantity of necrosed tissue, irrigated, and swabbed out with peroxide of hydrogen. The patient's temperature at this time was 103° . Within half an hour she had a rigor, with an elevation to 106.5° , and speedily developed a fatal pneumonia, which I have reason to think might have been due to an embolus detached by my manipulations. I mention this circumstance, not to discourage a practice which is laudable in itself, but to point out a possible danger.

It remains to ask, "How shall we proceed to determine the cause of fever during the puerperium?" Doubtless every one will be led by experience to adopt a certain routine method of procedure. My own practice has been, in the event of meeting with this complication, to first examine into the condition

of the bowels, then to inspect the breasts, and lastly to examine the pelvic viscera, with especial reference to the presence of localized peri-uterine inflammation. If the uterus is large and the os patulous, the possibility of intra-uterine trouble is to be borne in mind. Fetor may or may not be present; its absence is not a proof that septic endometritis does not exist. If there is a fresh laceration of the cervix, local infection at this point (too often overlooked) should be considered, and the parts should be inspected through a bivalve speculum, if it seems necessary. All these are elementary steps. Tentative local treatment will sometimes settle the diagnosis. I have sometimes seen the most alarming symptoms subside with the use of a few vaginal douches, and frequently has this been the case after two or three intra-uterine injections have been given. Careful and prolonged observation is often necessary in order to discover the seat of trouble. I have watched a patient for a week with continuous high temperature but without local pain or tenderness, and finally, after repeated negative examinations, an induration has developed high up in the iliac region, where it could not be reached per vaginam. In these doubtful cases I regard the immediate exhibition of antipyretics as a mischievous practice, since they mask the true condition by interrupting the natural course of the fever. By constantly giving them as soon as the temperature reaches 101° , we are prevented from learning whether we have to do with a continuous, a remittent, or an intermittent type. I believe, with Dr. Lange, that in Case I. the crises with profuse perspiration were not due to the administration of phenacetin, but were symptomatic of a typical pyemia. Quinine should be given in antiperiodic doses, and thoroughly tested, since there is no reason to doubt that puerperal malaria sometimes simulates septicemia. Meantime repeated examinations of the thoracic and abdominal viscera, of the throat (follicular tonsillitis may easily be passed over), can alone prevent us from overlooking a simple complication. In short, as I stated at the outset, the puerperal woman is liable to develop any acute febrile affection, independent of her condition; and though we naturally think of some fresh intrapelvic complication, after repeated examinations have failed to show evidences of septic infection

through the genital tract, we should expect to find either a recurrence of some former inflammation of the adnexa, an acute visceral affection, or one of the acute general diseases. But in many cases time alone will clear up the obscurity which surrounds the case, and he is the wisest who curbs his anxiety to adopt heroic measures, and forces himself to watch and wait.

CONCEALED ACCIDENTAL HEMORRHAGE INTO THE PUERPERAL UTERUS.

BY

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IN the year 1853, while on my way to California on board one of the Pacific steamers running between Panama and San Francisco, and when within a few hours' run of the entrance to the Golden Gate, as the passage from the ocean to the bay is called, our steamer ran into one of those dense fogs in which there is danger in pursuing the course; with extra watch on the main deck and other parts of the ship, we did continue our course until one of the watchmen heard the sound of breakers, when we came to anchor, and were detained within hearing distance of those breakers for a full twenty-four hours. When the fog lifted, we found we were headed directly upon some high projecting rocks near the coast, and that in five or ten minutes more of our progress we might have been wrecked. But with caution and a sharp lookout we were saved. So the physician often runs into a fog, when it is necessary that he should come to anchor and await the lifting of the fog. Notwithstanding he may possess the compass and chart, it is dangerous to push his course, and safety lies in anchorage.

Mrs. I., age 40, multipara, sent for me in the night about 11 o'clock, January 11th, 1891. I found her in bed, suffering most intensely with pain in the abdomen; her countenance was blanched and her features anxious. She said she was

faint and could only see indistinctly, not enough to distinguish the features of those around her. Her pulse was small and rapid, at times almost imperceptible; she complained of feeling cold. With every move she felt nauseated, and, prior to my visit, had vomited copiously several times and had two or three evacuations from the bowels of a bilious character. One of the first questions I asked was whether she was flooding, to which she replied negatively; but upon further examination she reported that she was about seven months advanced in pregnancy, and that for several weeks she had been troubled with a very severe spasmodic cough, and had been vomiting and suffering unusually from gastric irritation, retaining very little of the nourishment she had taken during the last month or two. With all these ailments she had likewise been distressed with the strong, frequent, and impulsive movements of the child in utero. At this time she was frequently belching the gas from her stomach, and complained of feeling "so full," and, with continued pain in her back, could not retain her urine, feeling disposed to pass it frequently. With every effort to change her position in bed there was an increase of the pain and a feeling as though she would burst, this accompanied with sensations of fainting and a sinking of the heart's action. Under this complication of symptoms I could only see the necessity of a resort to stimulating remedies, with a proper effort to keep her warm by both internal remedies and external heat, and, as soon as possible, to relieve the pain which she was suffering. I gave aromatic spirits of ammonia and whiskey, and, as soon as deemed advisable, a Dover's powder. With all these symptoms I could not rid my mind of the idea of hemorrhage. After a slight moderation of the pain, I informed the patient of the probability of a premature labor, and that such an occurrence might take place at any time. With directions to continue the means of relief we had been using, I returned to my residence, a short distance away, informing them that I would hold myself in readiness to return to her at any moment they might send for me. I had been at home not quite an hour when the husband came for me, desiring me to come at once, as "the waters had discharged." I went immediately, and found that the patient had had a small amount of relief after

I left, until the pain, increasing suddenly, caused what she supposed was a rupture of the bag of waters. This discharge gave more relief and considerable ease from pain. I asked if she had pains such as usually attend a labor; but, although I had previously asked the same question, in none of her replies would she admit that the pain seemed like that of ordinary labor. There were no remissions; its character was continuous—a tonic contraction. I examined the patient at my first call; found the os slightly open, but all that part below the internal os swollen, tense, and turned outward from the central point, presenting the appearance of a volcanic crater, with the internal os strictured to guard the opening.

At my examination subsequent to the supposed discharge of waters I found the os but little changed. On forcing my finger past the tense internal os, I found a tough and tense membrane still presenting, and through this I could discover, as I thought, the fetal head, and by gently tilting I found it was easily moved and evidently not impacted or engaged in labor. In my judgment, premature labor was about to take place, and the question was whether the patient could survive in this condition. I was anxious and feared the result. The patient was resting more quietly, although still complaining of the tense, bursting abdominal pain. Pulse under stimulants seemed to be improving, although still small and frequent. Nourishment was urged upon the patient, and warmth was continued externally. There had been no evidence of motion in the fetus at any of my examinations. I therefore made a stethoscopic examination, in order to ascertain whether I could discover any signs of vitality in the fetus. On examination I could find no evidence of fetal heart beat and no motion of fetus; but I did discover one of the most conclusive symptoms indicating the dangerous condition of my patient—the remarkable *bulging* of a portion of the uterus. This bulging was upon the left side of the uterine body, and of such prominence as to indicate that about one-third of the uterine ovoid was involved in this projection, or, as I should judge, nearly all the surface ordinarily included in the attachment of the placenta, thus showing the danger of the patient to be imminent.

Under this condition of things I asked for counsel, and

Dr. L. French was called in. Although comprehending the critical condition of the patient, he seemed puzzled to fix a diagnosis further than the probable event of a premature labor, and his advice was that we continue our remedies and await the result. This we did, and were encouraged in the evidence of our patient rallying a little in strength. During our waiting there was a moderate discharge of sero sanguinolent water. But every examination per vaginam showed the membranes intact and tense, through which we could feel the fetal head, evidently presenting in proper position. After pushing our plan for rallying our patient for several hours, and having evidence of its benefit, we concluded to rupture the membranes and hasten the labor. The membranes were ruptured about 3 P.M., and labor pains followed soon after; and within half an hour thereafter the labor was completed by the birth of a fetus at about the seventh month, dead. The placenta was soon removed; it was accompanied by a large amount of coagula. The placental mass appeared three times the size we might have expected in one at the seventh or eighth month of gestation. It was infiltrated with coagula, and presented the appearance of having the blood forced into the parenchyma of the placental structure by strong pressure. Subsequent to the passage of the placenta with its coagula there was a large blood clot passed, which I should think would weigh from twenty to twenty-five ounces.

I applied a binder with compress and pressure with the hands over the uterus, until evidence of a firm contraction was obtained. The patient slowly rallied, and a tedious recovery resulted.

In connection with this interesting subject we find that the most extensive and complete article published upon concealed accidental hemorrhage was written by Wm. Goodell, of Philadelphia, and published in the *AMERICAN JOURNAL OF OBSTETRICS*, vol. ii., page 281, 1870, from which article I quote: "In 1818 the French Academy of Medicine offered a prize for the best essay on the subject of internal uterine hemorrhages. In answer to this offer there were three essays that received prizes: A. C. Bandelocque 'crowned' first; M. Bonnière received gold medal; Madame Boivin, silver medal of emulation. Madame Boivin denies the possi-

bility of this complication, and in this opinion is sustained by Madame Lachapelle—women who could unitedly lay claim to the vast experience of over forty-two thousand labors. Velpeau, a more modern authority, expresses his scepticism in the following words: ‘How, indeed, can we conceive that the blood, which escapes from the uterine vessels in somewhat considerable quantities, is capable of dilating beyond measure, and almost instantly, the cavity of the womb, instead of running between the gestative organ and its contents, so as to escape outward, or of rupturing the membranes and becoming effused within their cavity?’

“Out of 22,498 labors occurring at Guy’s Hospital, only three cases of this kind of hemorrhage were observed; and not one in 156,000 deliveries at the Dublin Lying-in Hospital.”

Prof. Meigs, Prof. Hodge, and Prof. Bedford, American authors and authorities, make no mention in their works of ever having any personal experience in such cases. Blundell, Churchill, Burns, and Cazeaux have no clinical experience, and in their writings only quote the observations of others. Many other eminent obstetric authorities allude to this puerperal accident as historians and not as eye-witnesses.

Prior to 1860, according to the researches of Dr. Goodell, there were only twenty-two published cases of concealed accidental hemorrhage; but at the time of his compilation (1869) he reports one hundred and six cases. Case III. in his list much resembles the case I report, and for its comparative similarity I quote it in full:

“CASE III.—Æt. 40; sixth and a half month of seventh pregnancy. After house-cleaning, attacked by repeated vomitings, paleness, and faintness. Meteorism and distressing distention of abdomen, visible to bystanders, with a bursting feeling. Uterus distended as if at term, and bulging on right side. Absence of fetal and placental sounds. Cervix undeveloped, and no sign of labor for twenty-four hours, when a small amount of blood appeared. Carminatives given for *supposed colic*; after the hemorrhage opiates, stimulants, and ice externally. Membranes punctured after the pains had become vigorous, and the os dilated. More than two quarts of clots followed delivery; placenta two-thirds detached. Mother

recovered, child dead." (Reported by Thomas F. Cock in New York *Medical Times*, 1854, page 394.)

"CASE XXXVIII.—At term, missed a step in coming downstairs at night. Next morning found by her physician collapsed, cold, nearly pulseless, and suffering intensely. No labor pains, but one continuous pain of an intense, stretching character. Abdomen tense. Os as large as a florin. Membranes tense, without intervals of relaxation. No external hemorrhage. Physician gave stimulants and 'watched symptoms.' After some hours the membranes were ruptured, when an immense gush of bloody fluid came away, followed by rapid delivery of a dead child, and three clots each as large as the child's head. Placenta cup-shaped. Mother recovered." (By Dr. Brunton, London Obstetrical Transactions.)

This case in its representative symptoms is well expressed; the treatment and "watched symptoms" well taken; results favorable. Now let us quote the three cases of Goodell, as reported by Henry Oldham in "Guy's Hospital Reports," vol. ii., page 94:

"CASE XLIV.—Et. 40; seventh and a half month of fourth pregnancy. Vague abdominal symptoms, resembling those of menses, succeeded to a fit of emotion; became pale and faint; vomited. Under stimulants rallied for twenty-four hours, and then fell into an alarming syncope. Uterus now distended and tense; os dilated to size of a shilling; *membranes flaccid*; fetal head movable; no external hemorrhage; no signs of labor. When the nature of the trouble was understood, the membranes were punctured, a binder applied, ergot given, followed in three hours by labor, and in three hours more by delivery. The uterus seemed full of clotted and fluid blood. The placental structure completely obliterated and excavated, well illustrated by an engraving. Mother recovered, child died.

"CASE XLV.—Et. 40; tenth pregnancy; taken with fainting on the least exertion. In two hours was collapsed, pulseless, and cold. Abdomen, from its size, supposed to contain twins. Slight external hemorrhage after six hours. Although pains were absent the os passively dilated, the head even descending low down in the pelvis four hours

after membranes were punctured, which was done fourteen hours after the first attack. She rallied under stimulants, but suddenly died undelivered while the physician had gone downstairs for his forceps.

“*Autopsy*.—The placenta almost wholly detached, and the womb distended with blood enough to fill two chamber-pots.

“CASE XLVI.—Æt. 38; eighth and a half month of pregnancy. After drinking and carousing, became cold and sweating; had pain. Os dilated to the size of a shilling; head presenting; no external hemorrhage. The surgeon left, finding her intoxicated and with no signs of labor, but six hours after returned and found her dead, with the membranes ruptured, but child undelivered.

“*Autopsy*.—The uterine walls very thin; placenta flattened, thinned out, and entirely detached by about five pints of coagula.”

Thus in these three cases there were one recovery and two deaths undelivered, although they occurred within the wards of a large lying-in hospital, where we would suppose all things were at hand for the immediate and successful treatment of such cases. In Case XLIV. we infer that for a length of time the case was not understood, since the writer says: “When the nature of the disease was understood, the membranes were punctured.”

Dr. Goodell, in analyzing the one hundred and six cases on which his essay is based, makes a very full statement of the symptoms diagnostic of this very obscure disease. He places at the head of his list, as by far the most frequent symptom, “*an alarming state of collapse*,” carrying dismay into the heart of the bystander. Every detailed example, without exception, presents most of its characteristics, such as coldness of the surface, excessive pallor, feebleness of the pulse, yawns, sighs, dyspnea, restlessness, and retching.

Pain is the second in frequency, and its expression is as variable as the language in which it is given both by the patients and their attendants—such as severe pain, extreme pain, violent pain, “suffering the greatest torture, as though the abdomen would burst,” “very violent cramping pain,” “protracted spasm of the abdomen,” “a state of intense suffering,” “intolerable anguish,” etc.

Third series of symptoms is absence or extreme feebleness of the pains of labor.

Next in course is a marked distention of the uterus, which produces those painful sensations of "bursting," that burden of every cry of the sufferer.

Next, after a variable lapse of time, may be a "show of blood," in quantity from a mere ooze to a gush. This he looks upon as a trustworthy symptom, which, when it occurs, usually clears away all obscurity in relation to the case. This symptom may occur too late, and should not be depended upon, for its diagnostic value is only confirmatory.

The circumscribed lateral bulging out of the uterine walls has in some cases been a prominent feature, but its infrequency prevents it being considered as a constant symptom.

The extreme sense of tension, both in the uterus and its contents, on digital examination, is another symptom which gives weight to the correctness of the diagnosis.

Another symptom is the serous discharge which often takes place, and which is mistaken for the waters of the amnion. This symptom is mostly manifest when on examination it is proved that the membranes are still tense and unruptured.

As to treatment, Dr. Goodell says "the rule should be imperative to deliver the woman as soon as possible." This is correct, but under so many different conditions do we find our patient that those conditions are to guide us as to haste or otherwise, and greatly bear upon the methods advisable in such cases.

I now include in this report a few cases which have been published in different journals since Dr. Goodell's article of 1870, and some extracts from articles published upon the subject at times since.

IN THE AMERICAN JOURNAL OF OBSTETRICS, vol. iv., page 333, Dr. Goodell, at a meeting of the Philadelphia Obstetric Society, relates the following history of a case of *concealed accidental hemorrhage* of the gravid uterus:

"Three weeks before labor the patient, after house-moving, was seized with 'crampy and colicky pains,' followed by vomiting and collapse. Under appropriate treatment she recovered, but remained very weak and complained of a constant pain in her left side. Six days before labor, after severe

exertion, she had a return of symptoms. These were again controlled by rest and opiates, but a constant pain remained, with occasional exacerbations, until she went into labor. Dr. G. now saw her for the first time, and found her very pale and weak. The pains of labor seemed very inefficient, and yet she delivered herself very shortly after his arrival. The child was *still* and premature, with the skin peeling off from the extremities. Immediately after its delivery, the placenta and a large quantity of grumous blood followed. No further hemorrhage occurred, but the convalescence was slow, requiring several weeks of rest and tonics."

An examination of the placenta in this case showed the seat of two apoplectic effusions, one of much older date than the other. Microscopic appearances were those of degenerated placental tissue and old coagula.

Matthew D. Mann, in a "Report on Obstetrics," published in *THE AMERICAN JOURNAL OF OBSTETRICS*, vol. x., page 143, states :

"From an analysis of cases Dr. J. Brunton finds that the chief diagnostic symptoms of accidental concealed hemorrhage are sudden fainting and collapse, with blanching and continuance of the same, so as to cause great alarm to the medical attendant, intense continuous 'bursting' pain, tense membranes, and the symptoms of excessive bleeding, but without the external manifestations of flowing. The ordinary cause of separation of the placenta is that it has ripened (?). It may degenerate so as to fall off too soon. When near the time of labor there is more danger of sudden disturbance. Weight, size, vascularity, and sluggishness of circulation are factors which tend to hasten the separation. The immediate causes are sudden spasms, producing partial or irregular uterine contractions, violence (subjective), such as exertion, cough, missing a step, and, lastly, violence *ab externo*. Of his cases nineteen died and fifteen recovered—a very large percentage of deaths, making this a very fatal accident."

THE AMERICAN JOURNAL OF OBSTETRICS, vol. xiii., page 877: case reported by Dr. Wm. T. Lusk, President of the New York Obstetrical Society, as follows: "About eighteen months ago Dr. A. S. Purdy asked him, at about 7 A.M., to see a case of *supposed placenta previa*. The patient was a

primiparous woman, 39 years of age, and advanced in pregnancy about eight and a half months. On the evening before she had romped with a young nephew, and about midnight summoned the doctor because she was suffering from pain and supposed it to be the beginning of labor. The pain soon subsided, and Dr. Purdy returned home, but was called again early in the morning, and when he arrived found that a free hemorrhage had occurred, and then summoned a consultation. On making examination Dr. Lusk was able to exclude placenta previa, and diagnosed accidental hemorrhage. He introduced, therefore, the smallest Barnes' dilator, with the object of exciting uterine contractions, believing that the best method to arrest the flow. He remained throughout the morning, occasionally increasing the distention. The labor went on slowly until about 12 M., when the cervix was well dilated, the pains had become good, the membranes descended through the cervix. He then left the case, to return at half-past 3. On his return, although no external hemorrhage had occurred, it was evident, from the color of the patient's face and her general condition, that considerable internal hemorrhage had taken place during his absence. Dr. Lusk then ruptured the membranes, and, as she was anxious to have a living child, applied the forceps instead of resorting to version. It was nearly two hours before delivery was effected, and when finally the child was born it was found that the side of the neck and one cheek had been badly cut by the instrument. The heart beat, but the child did not cry; it moved its mouth, but made no noise, which produced some anxiety until Dr. Purdy pointed out the cause, viz., that one side of the face had been paralyzed by the pressure of the forceps. While occupied with the child, Dr. Purdy, who had taken charge of the woman, remarked that, though the placenta had come away, there remained something in the uterus, the nature of which he did not understand. Dr. Lusk, on introducing his hand, found the uterine cavity filled with tolerably firm blood coagula, of which he removed nearly a wash-basinful, and which were evidently not of recent formation. The uterus then contracted firmly, and both mother and child made a good recovery. The child is still living and quite strong. He wished

to place the case on record, because in the statistics furnished by Dr. Goodell of one hundred and seven cases of internal hemorrhage, only seven children lived, and of the mothers fifty-five died. He thought he should pursue the same course in another case of like character."

THE AMERICAN JOURNAL OF OBSTETRICS, vol. xiv., page 652 : Dr. Mundé, at a meeting of the New York Obstetrical Society, October 5th, 1880, reported a case of intra-uterine ante-partum hemorrhage occurring at Maternity Hospital at his service, and attended by Dr. G. F. Lydston, viz. : "K. S., primipara, age 24, single, Ireland. Has always enjoyed good health up to this pregnancy ; denies having venereal trouble ; date of last menstruation, February 22d, 1880. About middle of March commenced to suffer from gastric disturbances, and about the second month suffered from vomiting, which has continued up to the time of labor. The patient states she has passed less urine than usual ; was otherwise perfectly well throughout pregnancy until October 1st, 1880. About 10 A.M. on above date patient had an attack of syncope ; did not lose consciousness completely, though she was very dizzy. Surface was cold, and face covered with cold perspiration, although none of these symptoms were specially marked. She stated to the doctor that she was faint and had caught a severe cold, as was evidenced by slight coryza ; complained of no pain and made no special complaints ; was ordered to bed and pulv. Doveri, grs. x., administered. Since that time she ceased to feel the motion of the child. She arose Saturday morning feeling perfectly well, with the exception of the vomiting, which she has had throughout pregnancy.

"October 3d : Patient began having pains at 3 P.M. ; said nothing about them. When the doctor was called, found os fully dilated, bag of membranes protruding ; no presentation could be felt ; membranes were ruptured at 6:55 P.M. ; breech presented R. S. A. ; the lower limbs and breech were expelled at 8 P.M. ; after some delay the head and trunk were extracted ; with the head and trunk was expelled a large clot which had protruded with the breech ; the placenta was retained till shortly after 9 o'clock, when it was removed by expression by Dr. Mundé, who had at that moment arrived ; the uterus contracted promptly ; patient vomited shortly

after labor had terminated. No more than the usual amount of blood was lost at the confinement; the patient, however, had a decidedly anemic appearance. The clot was found to weigh one pound, seven and a half ounces; smooth and dense; evidently not of recent formation. All the appearances about the clot, such as its hardness, color, and manner of breaking up, indicated that it might have formed with the attack of syncope experienced by the patient two and a half days before."

Edward L. Partridge, M.D., in the New York *Medical Journal*, vol. xxxiv., page 561, 1881, has published an excellent article on "Accidental Ante-partum Hemorrhage," which considers the subject, in its causes, symptoms, diagnosis, prognosis, and treatment, in so unexceptional a manner that on some of these divisions I quote his words:

"The diagnosis is extremely obscure and embarrassing, as we learn from the united testimony of all observers (Goodell). This should not be regarded as discouraging, but should lead to the closest scrutiny of a doubtful case and the use of the greatest judgment. At the onset of the symptoms the condition of intestinal colic would most resemble that of concealed hemorrhage. A careful examination of the pregnant uterus, and the occurrence of more severe symptoms, especially those of the loss of blood, would be the means of determining between the two conditions. When the symptoms of collapse are present, the accident might be mistaken for rupture of the uterus. The history of the case would help us to a diagnosis, in that the former condition occurs prior to or early in labor, while the latter takes place at a later stage.

"The prognosis is grave. In one hundred and six cases collected by one writer (Goodell), fifty-four mothers died, and of one hundred and seven children only six survived. An early and correct diagnosis in all cases would diminish this death rate somewhat.

"The treatment demands the exercise of great judgment. We may wait in some cases to see what Nature can effect, not what she can endure.

"In the grave cases of accidental hemorrhage there is no safety until after delivery, which is therefore urgently called for. It must be brought about speedily, while every measure is taken to diminish the hemorrhage which will be continuing

in greater or less degree. At the same time, no means should be overlooked to rally the woman from the effects of shock and hemorrhage. Dilatation of the os must be brought about or aided by artificial means.

“Playfair says: ‘The first thing to be done, whether the hemorrhage be apparent or concealed, is to rupture the membranes.’

“Schröder says: ‘If labor has so little advanced that an immediate delivery appears *inadvisable*, ergot is to be given internally, and attempts are to be made by strong friction to make the uterus contract. If that is of no avail, and the bleeding persists, and the patient is still collapsed, the membranes must be ruptured.’

“Leishman says regarding accidental hemorrhage: ‘In so far as treatment is concerned, the first step is undoubtedly to rupture the membranes so as to give egress to the liquor amnii.’

“Barnes says: ‘The first thing to be done is to rupture the membranes.’ ”

Many other writers give the same advice. Dr. Partridge gives an extended criticism upon the advice of these authorities to first *puncture the membranes*, reasoning of the probable effects of an immediate rupture in increasing the danger in the case. He calls this unguarded advice, and then puts the question: “What, then, should be the treatment looking toward the safety of the mother and child, when immediate delivery cannot be resorted to owing to incomplete dilatation of the os? With the same decision which has characterized the advice of other writers to rupture the membranes as a first step, I should say, by all means *preserve them intact*, and thus tampon the uterine cavity with liquor amnii. Then, while deprecating, in the main, any advice tending toward routine treatment, I should say, in the great majority of cases, employ Barnes’ dilators until the desired result is obtained. The desired result, I infer, is a dilatation of the os and the inducement of labor pains. Such being obtained, then a rupture of the membranes and delivery may be attempted.” Partridge says: “Version fulfils indication better than forceps,” while if we examine Dr. Purdy’s case, reported by Dr. Lusk as counsel, we find that after rupturing the membranes he applied the forceps, because, as he says, “the woman was

anxious to have a living child, doing this instead of version," closing the report by saying that he thinks he should pursue the same course in another case of like character.

Dr. Lusk two years later says: "When evidence of uterine contraction is fully evident, and dilatation has taken place, then rupture the membranes and deliver by *turning*." How shall we reconcile this difference of procedure and advice? I can only say of this that the proper way is to treat the case with the method that good judgment dictates to be the best adapted to the case you have in hand. There is no one method adapted to all cases.

An article by Prof. Parvin in "American System of Obstetrics," vol. ii., page 66, says: "Uterine contraction furnishes a more reliable hemostatic than is found by pressure in uterine expansion, and the contraction is only possible after evacuation of the liquor amnii." We question the assertion as to the impossibility of uterine contraction while the membranes are intact. In the case reported as the foundation of this paper, there was evident contraction of the uterine body and considerable dilatation of the os prior to puncture of the membranes. And another refutation of the assertion is to be found in many of those cases of extreme uterine distention occurring in twin-bearing pregnancies. We hope, by the publication of cases and remarks upon this very dangerous condition of the puerperal female, to incite a more active and early effort to diagnose such disease, and through earlier recognition of the case we may be more successful in reducing the great percentage of mortality occurring in concealed accidental hemorrhage of the puerperal female.

TO WHAT EXTENT CAN UTERINE DISEASE BE PREVENTED, AND HOW ?¹

BY

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"For the greater part of my life," says Lawson Tait, "I have been engaged in the study of and practice amongst the

¹ Read before the New York Obstetrical Society, April 7th, 1891.

special diseases of women, and no conclusion is more firmly rooted in my mind than a devout thankfulness that I belong to the other sex." "From the cradle to puberty they seem to be on fairly equal terms with men, but from that moment, through the whole of the period of active life, their existence is one of prolonged suffering." "The great function of their lives is led up to by troubles, and from it endless suffering springs."

No one knows better than the obstetrician and the gynecologist the full meaning of these words.

While the Fellows of this Society may not be willing to indorse these statements of Mr. Tait in their entirety, that one's experience and observation have been limited indeed if they do not lead him to echo this expression of thankfulness that he belongs to the sterner sex. Not all the extolled joys of maternity, nor the glories of motherhood, nor the formative influences on the rising generation which only the mother can exert, would cause one of us to hesitate a moment in his choice of sex. And yet there is not one who hesitates to admit that this ought not so to be. It behooves us then, as obstetricians and gynecologists, and indeed is incumbent upon the whole profession, to discover why it is so, and to do intelligently and vigorously all that can be done to effect a change.

In the simpler and less conventional forms of society we are told that women know not these ills; that the peasant woman working in the fields will be taken with labor pains; these she regards not till the critical moment, when she retires to her cabin to complete her travail, and returns again in an hour or two to continue her work; and this is repeated at successive intervals throughout her reproductive life; menstruation she rarely experiences.

While recorded history goeth not back to the time when menstruation was an unknown function, I doubt not the time was, in the history of the human animal, when the monthly flux was an unknown experience to our wild and unhampered sisters; when, with the unrestrained freedom of intercourse that gratified the earliest promptings of passion, the young girl found herself a mother ere the life of a single ovum had failed for want of impregnation; and ere lactation had ceased she found herself again on the road to maternity

without having experienced the unpleasant process of menstruating. And this might go on throughout the entire period of ovulation.

Such freedom from menstruation, due to frequent pregnancies, for periods ranging from five and six to ten years, is not without parallel in our own time, and in my own experience, among women of the lower classes.

If, then, the untutored savage does not suffer and the civilized woman does, we must look to the elements or the details of our civilization for the cause. And, from a physiological standpoint, we need not search far ere we discover that our social, our educational, and our hygienic customs are sorely at fault, especially in the rearing of girls. No conviction is more indelibly impressed upon my mind than that a vast majority of the ills that beset womankind can be traced, directly or indirectly, to the lack of proper development of the generative organs at puberty. The dysmenorrhea of early womanhood, the cervical catarrh and endometritis of a little later period, and, added to these, the curse of sterility of married life, or, if fortunately this be overcome, the sickening months of gestation, to be followed by laceration of the cervix and all its train of evils—are but the natural sequelæ of neglecting the organs of generation at a time when they should be the supreme care.

The picture of the ambitious girl who has stood at the head of her classes and taken all the prizes, for which she pays the sad price of years of suffering and invalidism, we have had drawn for us sufficiently often and in colors sufficiently brilliant to draw its own individual lesson. The hasty conclusion from this that girls cannot endure severe intellectual effort, nor the training necessary to put them on an intellectual equality with man, is very wide of the truth. The many brilliant minds among women that meet us continually and on every hand, not only in the field of letters but in our own profession, attest the truth that the difference between man and woman does not lie in intellectual capacity, differ though they may in certain qualities of mind. The girl is entitled to just as good and just as thorough mental training as the boy, and at the same time she is entitled to recognition of the fact that she must have it in her own way and in her own good time.

The great criticism to be made upon our educational systems, both public and private, is that no cognizance is taken of the fact that a girl, when she comes to the years of womanhood, passes through a great crisis in her physical life, which ushers her into a new existence. Henceforth her life is made up of periodic tides and exacerbations, which for the succeeding few years, until the function of menstruation is established, dominates her entire system. If at this time the mental faculties are stimulated and forced, and so the nervous system exhausted, the little, anteflexed, infantile uterus and its undeveloped adnexa are robbed of their proper nerve and blood supply, menstruation is deferred, and the infantile uterus persists. And it is the persistence of this infantile uterus, as we follow it along through the advancing years and experiences of our patient, that is the source of so much trouble—the dysmenorrhea, the sterility, the lacerated cervix. “Had there been no premature labors nor infantile uteri,” says Dr. Arthur Johnston in his thoroughly scientific paper read before the American Gynecological Society, “I do not believe that laceration of the cervix would have ever played much of a rôle in the support of the practitioner”; and again: “A surprisingly large proportion of torn cervixes gives a previous history of symptoms which point to a greater or less arrest in their early development.”

No one simple lesion in the whole range of gynecology is responsible for so much trouble as the lacerated cervix. To have discovered this lesion and devised a method of cure is glory enough for a lifetime. And in this our esteemed Fellow, Dr. Emmet, has immortalized himself. But to have pointed out the source of the lesion, and so put it in the power of the profession to anticipate the injury, is worthy of all praise. But the time to anticipate is when Nature is ready to anticipate by developing the girl into the complete woman.

To be more explicit, and establish the points on which it seems to me we, as professional men, should take a decided stand and make our influence felt in educational circles and upon the mothers of the rising generation, there seems to be no reason why the girl and the boy should not be both playmate and classmate together up to ten or even twelve years of age; then for the succeeding three or four years the mental

strain upon the girl should be diminished, with entire absence of all intellectual requirements during the few days each month of her periodic sickness. This, of course, necessitates the complete separation of the girl's curriculum from that of the boy. While he is able to hold steadily and constantly to his mental effort in accord with his steady and constant physical development, the girl must have periodic relaxation to allow of her periodic physical development. When once this has been accomplished, and the girl's feet planted on a basis of enduring health, then the intellectual effort can be resumed with renewed force and application, so that at 20 she will again stand abreast with her old-time companion and competitor. But for these few formative years give her more sunshine, more fresh air, more physical exercise, and more time for complete relaxation both of body and mind.

So much of this criticism is directed toward education—and by this I mean, in this connection, the simple training of the mind—for the reason that, in our country at least, this one feature of early girlhood is common to all social classes. To my mind, when one views the subject in all its remote details, no sadder sight can be witnessed in this great city than is presented by the nervously tired, restless, anxious faces of the girls of our Normal School as they come pouring into the cars of the elevated trains in the afternoon; for they are not only developing wonderful capacities for future suffering in neuralgias and backaches and fits of depression, but they are to be the school teachers of the following generation, upon whom they are to inflict the same relentless system.

But the training of the mind is not alone responsible for the persistence of the infantile uterus and the woes it brings. The social custom which, among our upper classes, puts a girl through her training at this critical period at a pace that shall make her a charming social bud at 17, with all the nerve strain it involves, is in utter violation of the plainest teaching.

Dr. Emmet codifies the instructions to a girl of this age very tersely when he says: "She should be kept a child as long as possible; made to associate with children. Her dress, her diet, her habits of life, should all be looked after as carefully as if she were a child, and, above all, the habit of regu-

larity should be observed in all details." Unrestrained romp and play of outdoor life is the best exercise, but in connection with this the "setting-up" drill of a well-regulated gymnasium is of great service. A new and most commendable interest has been awakened in the physical development of girls here in this city through the recent organization of the Young Ladies' Athletic Club. Each applicant is carefully examined by a competent medical examiner, the strong and the weak points in the physique carefully noted, and the prescribed exercise adapted to the requirements of each individual case. The ambition to perform remarkable feats of agility and strength is frowned upon, and the training is steadily directed to the promotion of health and the power of work. This must not only develop the bone and muscle of the fair gymnasts, and so exert its healthful influence indirectly upon the nerve centres, but is awakening a widespread interest among the younger social element in physical culture and revolt against the vicious features of woman's dress. By these exercises, to which should be added, in their season, swimming, fencing, riding, and rowing, not only is the breathing power increased, the heart action strengthened, the diaphragm improved in power and function, but the hepatic circulation is stimulated and thereby the blood supply increased to the abdominal and pelvic viscera.

All this is familiar ground enough to all of us, but the direct relation of cause and effect between this undeveloped uterus due to bad educational, social, and hygienic habits, and the uterine troubles of later life, cannot be too often presented nor too frequently emphasized, either to the profession or to the mothers of our families. If the one almost universal habit of constipation of the bowels which exists among girls could be eradicated, a great factor in the causation of uterine trouble would be removed. And yet this is due almost solely to ignorance of its importance, together with improper diet and insufficient exercise.

No doubt the numerous flights of stairs which characterize our modern houses are responsible for great aggravation, if not direct causation, of uterine engorgement and catarrh. In ascending a staircase a woman, if you notice, throws her body forward to such a degree that the abdominal and pelvic cavi-

ties are converted into one continuous cylinder; then, by fixing the diaphragm for the effort, all the abdominal pressure is brought to bear directly upon the pelvic contents, and with what baneful results we know. All this can be avoided by keeping the body in an erect posture and making the legs do the work.

Neglected and latent gonorrhea is now recognized as the cause of some of the worst forms of uterine and tubal trouble. But it is only during the last few years that a neglected gonorrhea has been of any particular concern to the physician or the patient till these remote consequences declare themselves. But now that we know the subtle tendencies of the disorder, the intelligent physician stamps it out with all the speed he may, not only to relieve the patient's discomfort, but to prevent still greater.

The usual chronic difficulties resulting from confinement we have almost wholly within our power to prevent, if we will but use it at the time. The lacerated cervix and perineum are easily restored, and the subinvolved uterus promptly reduced and made to retain its place, by proper treatment ere the evil consequences have appeared. The routine visits for nine days, with hasty glances at the patient and superficial instructions to the nurse when all apparently goes well, are not enough. No woman should be dismissed from the doctor's care after confinement till he is assured by careful examination that no laceration of the cervix exists, that the uterus is properly involutioned and its ligaments of sufficient tone to retain it in place.

But great as are the accidents of confinement, and frequent as are the troubles and misfortunes following, they are not so uniformly present as the evils attendant upon miscarriage. In the one Nature has perfected her work of reproduction, in the other she has been thwarted. And while, from the inherent nature of the case, the miscarriage should obtain more attention from the accoucheur, custom has determined it otherwise. Few women, whether they have children or have none, go through the term of married life without at least one miscarriage. And when a patient presents herself for treatment, the almost universal history is that she dates the beginning of her trouble from that mishap. The moral of all this

is that the miscarriage demands more careful attention in its after-treatment, and that the patient be put upon the same formal régime as the parturient woman.

There are other and most baneful causes of uterine troubles which might be emphasized in this connection, but they are less amenable to the control of the physician, and in many instances are too delicate or too obscure for him to take open cognizance of them. The few sources of trouble which I have enumerated come under our observation daily, and are practical, importunate demands of the hour, if we are to improve the physical endurance and comfort of our American women. The most imperative demand, I take it, however lies in reforming the dress, the habits, the mental and physical training of the growing girl. Let her feet be planted on the enduring basis of symmetrical physical development, and then, with proper medical attendance, her health will be secure against the trials and strain of her future life.

HEMORRHAGES IN THE NEWLY-BORN.¹

BY

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THE young infant has less blood, in proportion to its entire weight, than the adult. This blood has less fibrin, less salts, more hemoglobulin in the newly-born, less hemoglobulin in the infant of a few months, less soluble albumin, less specific gravity, and more white blood corpuscles than the blood of advanced age. Therefore the blood of the infant, the newly-born included, by its very composition, appears to predispose to pathological changes based upon its physical condition. Amongst these pathological changes, however, hemorrhage is not, as long as the condition of the blood vessels is absolutely normal. Thus it is the latter which has to be studied to explain the causation of hemorrhage.

¹ Read before the New York Obstetrical Society on March 17th, 1891.

The proportion of the heart to the rest of the body is largest about the time of birth, and remains so for a little while. That would appear to increase the blood pressure in the arterial system, but E. Hofmann discovered the peculiar fact that the arterial pressure is very small in the newly-born animal. Even as large arteries as the carotid, when cut, do not spurt as in the adult. This lack of elasticity is one of the reasons why cords not ligated may not bleed, with the exception of those cases in which the arterial pressure is increased by a moderate degree of asphyxia, or the lungs are not inflated in consequence of incomplete development of the muscular strength, in the prematurely-born fetus. The low degree of arterial pressure would also account for occasional venous stasis, with the result of increasing the predisposition to hemorrhage in the venous territory.

All this is within the range of the normal condition of the young blood vessels. They may be torn by violence or undergo the results of embolism. The latter takes place in the newly-born, as it does in advanced age. It is true that congenital heart disease is not liable to produce it, but thrombi taken up in the ductus arteriosus Botalli may be carried into and fastened in an arterial capillary of the stomach or duodenum, and thereby produce melena.

In the arteries of medium and small calibre the elastic membrane is thin and simple; it is only in larger arteries that elastic fibres will also extend into, and mix with, the adjoining layers. The elastic membrane is liable to be thin where arterial branches are given off. It is here where spontaneous hemorrhages are apt to take place. It is here also where, in later life, aneurisms are met with, such as find no ready explanation by an injury. Even when an injury has been received, it is most probable that aneurisms will form on the very spot of the feeblest development of the elastic tissue.

In some cases of aneurisms in the young, Eppinger found the elastic tissue abruptly torn; the muscular layer was in a similar condition, and the two joined each other and were rolled up into each other in the most various ways. In some cases the muscular layer did not stop abruptly, but grew gradually thinner and exhibited granular degeneration.

The elastic tissue is disseminated in very various propor-

tions, both normally and abnormally. To the latter class belongs what I have just said; to the former the fact that, for instance, in the vessels of the umbilical cord there is *no elastic* membrane and no intima. Some elastic tissue is found near the umbilicus, it is true; it gradually increases in the abdominal cavity; but the intima is not developed in the arteries until they are in close proximity to the iliac. Thus, by the massive and powerful development of the *muscular* layer only, besides the low degree of arterial pressure, is it explained why there are so few hemorrhages from the cord, though no ligatures have been applied. Thus, however, it is also explained why a slight irregularity in the development of the muscle to which the contraction and closure of the arteries are delegated, suffices to keep up a hemorrhage from the stump after it has once started.

Congenital incompetency of the whole wall of blood vessels is by no means infrequent. It may be so marked as to predispose to the formation of aneurismal dilatations. Cruveilhier described a case of cirroid aneurism depending on congenital thinness of the tunica media, and refers to the fact that sometimes a thin artery cannot be diagnosticated from a vein. Virchow explained the most persistent and incurable cases of chlorosis by the thinness and smallness of the arteries, and met with a case of simple dilatation of the blood vessels of the pia mater, and consequent aneurism, which depended on atrophy of the media. Klebs observed thin vessels in a dropsical child of thirty-two weeks, and C. O. Weber, Balassa, and Gall refer pointedly to the influences of congenital atrophy and debility of the arterial walls. Finally, Dieulafoy (*Gaz. hebdom.*, 1877, 16-18) described the case of hereditary cerebral hemorrhage which defies any other explanation besides that of a physical defect.

Abnormal smallness of the arteries has attracted the attention of many observers as a far from infrequent occurrence. Lanceraux describes an aorta which was thin, yellowish, and fatty, and had a circumference of only five or six centimetres in the adult. Long before him Morgagni and Meckel observed a deficient development of heart and aorta, and Rokitansky found, at the same time, smallness of the heart, arteries, sexual organs, and body. On these he does not look as secondary

atrophy, but as original hypoplasia, without, however, connecting them with chlorosis. Bamberger speaks of small arteries not interfering with the size of the body, but resulting in chlorosis without or with hemorrhages. Such hemorrhages have been noticed by Trousseau in later life; he describes a hemorrhagic form of chlorosis. Virchow also, who has traced better than anybody the connection of small arteries with the worst forms of chlorosis, connects these occurrences with the profuse hemorrhages sometimes taking place during chlorosis itself.

There are blood vessels so thin and incompletely developed, and at the same time integuments so poorly formed, that bleeding will now and then make its appearance spontaneously. I have described two such cases—particularly one in which blood would trickle from the surface of the lower extremity like perspiration, in drops, day after day, until the newly-born died of exhaustion. In such a case the deterioration of the vessel tissue does not necessarily depend on a constitutional disease, but on insufficient structure only. Of constitutional diseases, it is principally syphilis which gives rise to such a hemorrhagic diathesis.

Whether histological changes of the blood-vessel walls take place in the newly-born—as, for instance, the hyaline degeneration of Recklinghausen's—remains to be seen. The few cases in which it was known to give rise to hemorrhages were babies of nearly a year. . . .

Not every case of hematoma of the sterno-cleido-mastoid muscle is due to the meddlesome practice of squeezing, twisting, and pulling, but there are many of the kind. The greater the fragility of the blood vessels of the newly-born, the greater ought to be hesitation and caution on the part of the obstetrician. . . .

Though the undeveloped condition of the blood vessels and of the cranial bones of the newly-born are the usual causes of cephalhematoma, still many cases of this anomaly, and particularly the more dangerous ones, are avoidable. For there is no doubt in my mind of this, that the pressure of the forceps produces many. Altogether the effect of that instrument has been estimated with too great leniency. When I was young I was taught, and even at

present it is claimed, that it acts by traction only, and not by pressure. The fact is that it must, by its very presence between the head and the pelvis, diminish the narrow space. That it compresses the head is but too plainly seen by its traces left on the surface, with or without suffusion, abrasion, and local indentation. By so doing it strains, presses, tears blood vessels, and there can be no doubt that hemorrhages follow many an application of the instrument. The frequent connection of external and internal hematoma endangers the brain to a great extent.¹

It is, however, but just to say that, when we remember that it is indeed pressure which gives rise to hemorrhage (and thereby serious cerebral consequences); further, that there are more fatal cases from prolonged labor than from forceps, and that

¹ Drs. Winkler and Bollaen have written a paper in a Dutch medical journal on "The Forceps as a Cause of Idiocy." They mention a case of bilateral, almost symmetrical, damage to the cortex of the brain found in an idiot. The boy had been born with the aid of forceps. Only part of the vertex could be examined. There were no marks of the forceps, yet there were strong reasons for belief that the injury was caused by it. In another case there was still more ground for the opinion that injury had been caused by forceps. In this child, who was an idiot from birth, there were marks of the forceps on both sides of the skull corresponding almost exactly to the damage done to the brain. This coincidence was too remarkable to be accidental. Drs. Winkler and Bollaen performed necropsies on ten idiots, and examined twenty-five living idiots, of whom six had bilateral depressions in the skull. Another case was that of a woman born with the aid of forceps, an inmate of the Utrecht asylum for four years. She was very short, being only 1.27 metres high, and small in proportion. She could make all movements, isolated movements being difficult to her. There were but two words which she could say, and she never gave any sign of understanding what was said to her. She died at the age of 60, and at the necropsy the brain was found to be very small, weighing only seven hundred and forty-two grammes (thirty-one and one-half ounces). All the organs at the base of the brain, the optic nerves, olfactory nerves, etc., were found to be very small. Deep depressions were found on either side of the sagittal suture, the right being the more indented. The depth of the depression was two millimetres, and its greatest breadth twelve millimetres. The brain was much atrophied. The authors believe that depression of the skull caused by instrumental delivery, even when no fracture occurs, tends to damage the cortical substance of the brain, and that this leads to general atrophy of the hemispheres, thus producing idiocy. They are disposed to think that the use of forceps is much more frequently the origin of idiocy than is generally supposed.

Of Mitchell's four hundred and ninety-four cases of idiocy, twenty-two had been extracted with forceps.

a great many fetuses beginning to die in utero are kept alive by the speedy use of the forceps, this instrument may still be less guilty. The real cause of the cerebral disturbance is traumatic injury of cerebral tissue, or hemorrhage, or, at all events, circulation rendered abnormal for a shorter or longer time.

This takes place in asphyxia, or suspended or interrupted animation. It destroys a great many new-born infants that would live but for it; it results in meningeal and encephalic hemorrhages, sometimes by retarding and impeding circulation through thrombosis only, which either prove fatal in the earliest period or give rise to permanent paralysis. It works still worse results, for death is nothing compared with what asphyxia often results in, viz., idiocy or feeble-mindedness.

Amongst the idiotic or feeble-minded children there are those who are evidently *predestined* to that intolerably grave and unfortunate condition. Some cases depend on premature ossification of the sutures and fontanel; where this has been completed at birth or soon after, there is no possible hope except the surgical dividing of the cranial bones. Others result from defects of the brain following either an arrest of development or an embryonic or fetal meningitis or encephalitis. A certain number of these are recognized by positive cerebral symptoms, such as partial or total paralysis, an unusual degree of strabismus, or nystagmus. Others, again, exhibit anatomical changes about the head closely connected with the aberrations in the structure of the brain; for instance, the horizontal ramus has an obtuse angle, the roof of the mouth is Gothic or flat, the ear is in closer proximity to the occiput, its helix or lobule absent, the eyes are oblique and too close together, the epicanthic folds flabby and deep. They cannot be prevented or healed by the obstetrician.

There are other cases of idiocy found in apparently normal children. Head and face are well formed, but they are those of idiots nevertheless. In the course of a third of a century I have seen many hundreds of that class; my attention was early drawn to them, indeed since 1858, when I published my observations on premature synostosis and its pathological and diagnostic importance. Not a month will elapse but I have

to pass sentence on such a case either in my office or the clinic. A great many of these idiots are the first-born children of a family; the majority are boys. It struck me that the prolonged parturition of the first child, and the larger circumference of the male head, must be held responsible for the injury befalling the brain. In not a few cases the delivery had been terminated by forceps; in a very large percentage the history of asphyxia, more or less protracted, was readily obtained. I have no figures to present, but no student or medical man attends my clinic for any length of time but hears the record of such a case. In I. Langdon Down's experience (*Trans. Obst. Soc. London, 1876*), forty per cent of the idiots who were first-born children had a history of asphyxia. The connection of asphyxia and idiocy, after its existence has once been stated to you, is so clear that I need not detail it. Asphyxia results in congestion, effusion, thrombosis, extravasation, destruction of nerve tissue, secondary inflammation, and cystic degeneration. The longer the duration of asphyxia the greater the danger. Asphyxia of long duration is always dangerous; a brief one may be so, but it promises better results. Thus no asphyxia must be left unattended for a second. A few moments gained may save life, or, what is of more importance, intellectual health. Thus the immediate treatment of asphyxia is the gravest duty of the obstetrician. This duty is the same though the cause of idiocy or epilepsy be not found in actual hemorrhage. In some cases thrombosis is as active as hemorrhage; thrombosis results from a retardation of, or impediment to, circulation in consequence of asphyxia.

The prognosis of asphyxia appears to be better after breech than after head presentation, undoubtedly because in the former the opportunities for the occurrence of cerebral pressure are less.

VAGINAL HEMORRHAGE FROM A FIRST COITION;
SEPTICEMIA; DEATH.

BY

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Los Angeles, California.

FIFTEEN years ago, on the day preceding her death, I saw the young Irishwoman whose case is now narrated, with a physician of Philadelphia, and it is with his full concurrence that this note is published:

CASE.—Mary O'B., age 22, healthy and well developed, after the first coition bled so freely that her husband became alarmed and summoned my friend, Dr. X. The hymen was found to have been torn down to the perineum, and its edges were bleeding freely. The application of persulphate of iron checked the hemorrhage.

On the second night afterward Dr. X. was again aroused from his bed by the too persistent husband, and found the woman bleeding freely once more as the result of a second coition. A tampon was hastily applied and the hemorrhage arrested. Unfortunately Dr. X., overwhelmed by an enormous practice, forgot to remove the tampon until he was reminded of his omission, on the fourth day from his first visit, by a message informing him that the patient had had a severe chill.

In spite of all that could be done, chill followed chill, with the too familiar attendant symptoms of high fever and drenching sweats, until death closed the scene on the tenth day from Dr. X.'s first visit.

The hymeneal rupture was not greater than that which usually occurs. There were no symptoms pointing to localized pelvic or abdominal inflammation. Though no autopsy was made, the clinical history demonstrated beyond a doubt that the patient died from a virulent form of septicemia.

Comment.—As the readers of this JOURNAL well know, styptics and tampons are but bungling methods of checking

hemorrhage in such cases; nor is it necessary to dwell upon the point that, had not my unfortunate friend neglected anti-sepsis, the result would almost certainly have been different.

It is to be regretted that, even at the present day, general practitioners make such limited use of that admirable little instrument for which we are indebted to the ingenuity of Koeberle—the hemostatic forceps. In almost all cases where ligation, suturing, or torsion is not readily applicable, as in some lesions of the uvula, tonsils, vagina, and rectum, it may be applied to the bleeding point or points with instant effect, and left dangling from the wound for a few hours, with little or no inconvenience to patient or physician.

I would, then, urgently advise the practitioner to provide himself with one or two dozen snap forceps of different sizes and shapes (the shortest should be five and one-half or six inches long). It is safe to say that the physician who learns to employ them will almost daily find new uses to which they can be put.

In hemorrhage from the rectum I have found them almost indispensable, and it is with great surprise that I have failed to discover any mention of their use in this connection in the excellent work of Kelsey, who still clings to the cumbersome cautery and the effete methods of packing with lint or sponges and cotton.

929 SOUTH MAIN STREET.

MENSTRUATION: ITS NECESSITY AND PURPOSE.¹

BY

ARTHUR W. JOHNSTONE, M.D.,

Cincinnati, O.

(With five illustrations.)

THE views I bring you to-night on this time-worn subject are not original in the sense that this is their first production.

¹ Read before the Obstetrical Society of Cincinnati, December 11th, 1890.

They have been presented and printed, from time to time, in the transactions and procedures of various societies during the last ten years. That you may understand them most fully, I will go back to a subject that I studied in Dr. Heitzman's laboratory in the winter of 1880-81. The topic was the "Origin of the Blood Globules"; the tissues studied were the spleen, tonsil, thymus and lymphatic glands, as well as the lymph tissues in the walls of the alimentary canal.

By the use of high-power lenses, from one-twelfth to one-thirtieth, I discovered an overlooked method of cell development. It is that the sustentacular threads of all lymphatic tissues contain a series of gradations, from a granule, barely visible with this very high power, up to a full-grown corpuscle.

This paper was printed in the New York *Archives of Medicine*, August, 1881, and you will now find it on page 105 of Heitzman's "Microscopical Morphology."

Before this discovery I had taken as proven the idea, taught by Virchow and others, that cell division is the principal means of tissue growth. For I searched faithfully for this process in normal adult tissues; and while I frequently found cell division going on in fetal tissues and in inflamed and degenerated adult tissues, I can now fully state, after ten years' search, that I have never yet seen this cell division going on in a normal adult structure. And while I did not realize the sweeping influence of the discovery that I had made at the first, yet I am now thoroughly convinced that this silent growth of the granule to the fully developed cell is the means by which normal adult tissue cells are furnished.

At this point my study of the adenoid tissues was arrested until, by accident, in hunting for some pathological conditions in some of Mr. Tait's specimens, I happened to make a good section of the normal endometrium and found that it was a truly lymphatic tissue, and not a mucous membrane in the ordinary acceptance of the term.

From this hint I worked out a paper on "The Menstrual Organ," which was read before the British Gynecological Society in June, 1886. In this paper I proved, to my own satisfaction at least, first, that the endometrium is a lymph tissue; second, that the lymphoid character of this tissue be-

gins with menstruation and lasts until the menopause. Previous to that the endometrium is composed of nothing but very fine sustentacular threads which seem to lie perfectly dormant, and, like the hair follicles, before puberty has no functional activity.

After the menopause this tissue seems to be thoroughly worn out, and looks more like the kind of structures that are found in the adult occupying the site of the fetal thymus gland.

I do not know how I can better bring home the micro-

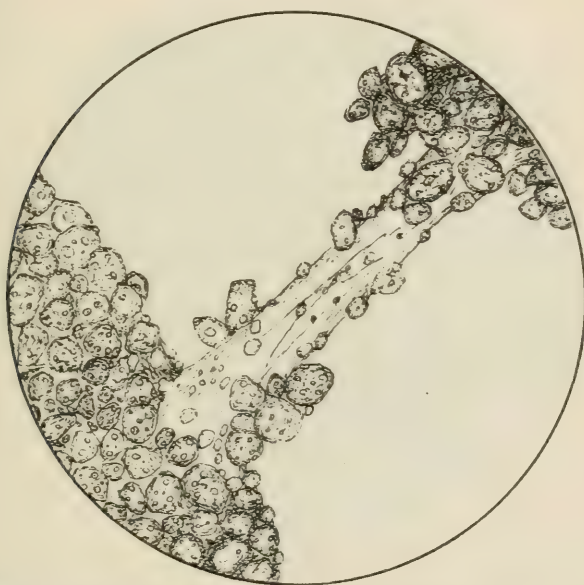


FIG. 1.—Fibre of endometrium, showing different grades of corpuscular development.

scopy of this subject than to refer you to the drawings in this paper, and to quote from it descriptions there used of the drawings.

Sketch No. 1 shows the ultimate fibres of the endometrium of a full-grown woman, and demonstrates the gradation about which I have just been speaking. As near as I can make it, it is an exact copy of what a Wales one-thirtieth shows, both in scale and minuteness of detail.

The objection so frequently offered against conclusions of microscopical work in histological research, that the appear-

ances seen are the result of artificial treatment, cannot hold good in the present instance, for more than once I have been able to begin freezing a uterus before its own animal heat had left it, mounted at once without staining; and in a healthy menstruating uterus the view is always the same.

Having satisfied myself that the corpuscles of the healthy endometrium are never found bifurcating, as we have been taught to believe is the only method of cell reproduction, but that the developmental gradation is always present, I was convinced that the tissue belonged to that class of organs

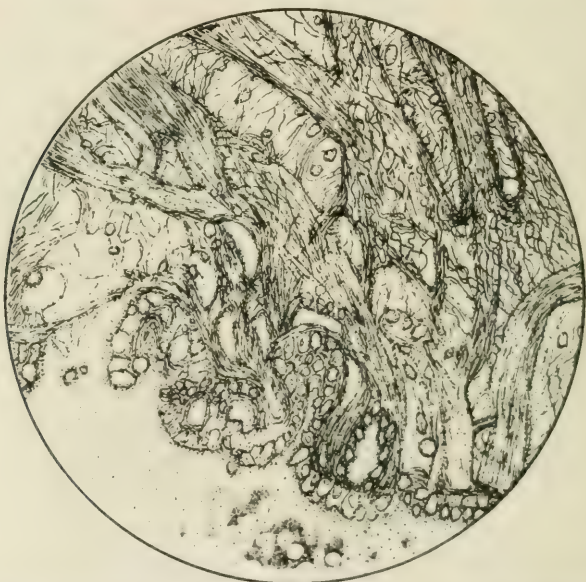


FIG. 2.—Endometrium of girl 11 years of age, showing no corpuscular development.

whose function it is to replace the organic waste, and that it ought to be ranked with the spleen and thymus gland instead of the vagina and bladder. This being the case, its life history ought to be that of the cytogenic organs. Starting off on this line, I have examined the uterus at all ages, and these sketches are the result.

No. 2 is from a child 11 years old. A casual glance would make us think that her endometrium was nothing but a thick, dense layer of fibrous connective tissue between the muscular wall and the very slight, badly developed row of round cells

that take the proper place of the lining epithelium. But with eight hundred diameters, under which these sketches are drawn, it can be easily seen that this is not ordinary white connective tissue, which its large bundles so closely resemble. In the first place, they have no proper large, well-formed nuclei, which fibrous tissue of this age always has; but, most important of all, on looking closely at the edges of the large bundles you see that they are composed of a fine, fluffy, thread-like tissue, which the adenoid organs alone possess.



FIG. 3.—Endometrium of girl aged 13, menstruated twice, showing beginning of corpuscular development.

A few corpuscles are dotted about through its meshes, and the little pits for the future glands are conspicuous for their shallowness.

No. 3 is the endometrium of a girl of 13 who had menstruated but twice. In it you see the epithelial covering fully developed; the fine threads are becoming granular, the corpuscles much more numerous, and the whole is much richer in the so-called protoplasmic elements; but the dense bands still remain, and one familiar with the adult tissue can see that this is only an approach toward it.

No. 4 is from a fully grown, well-developed woman of 20. In her endometrium we have the view with which you are all familiar, and I introduce it only for comparison. In it you see everything—bands, plates, threads, and all—studded with their protoplasmic outgrowth, just ready to take up and nourish the ovum by forming its placenta. And at this stage we can truthfully say that the endometrium has reached the acme of its unimpregnated development.

The ruin to which old age brings it is well shown in the



FIG. 4.—Menstruating endometrium of woman aged 20, showing utricular follicles denuded of epithelium, with one still containing epithelial cast.

last of the series, No. 5. The first thing which strikes you is the absence of the large bundles and the thinness of the whole membrane; for, looking closely, the fibrillar structure seems wasted, the corpuscles are few, and the utricular follicles are shrunk and scanty. By comparison with No. 4, which is the type of the placenta-producing organ, I feel warranted in saying that the material from which the placenta is formed has been used up, and that it is a physical impossibility for it to produce an after-birth.

Thus we see that the life history of the uterine lining is

analogous to that of the thymus gland. 'Tis true that this organ comes into the world in an active state, and that it is the first of the cytogenic tissues to finish its course and sink into aged obscurity; but it is equally certain that it is the type of the whole class. For, as we have long known of Peyer's patches, the tonsil and the other lymphoid structures, sooner or later they all follow its example, and, like worked-out mines, ruin and decay alone mark the spot of their former activity.

The quiet entrance of the endometrium and its persistent



FIG. 5.—Endometrium of woman aged 60, showing exhaustion of whole structure.

repose for the first thirteen years do not invalidate its claim to a place in the class. Is this gradual approach to maturity any more wonderful than that the hair follicles, whose first products herald the approach of adult life, should have lain still so long? Has any one ever thought of questioning the history that the Greeks have for all time recorded of the thyroid development? In their masterpieces we find that the Venus of Milo is a girl just budding into womanhood, with that slight, willowy throat that the scalpel now tells us is due

to the rudimentary condition of the thyroid gland. In the Venus Callipygos, however, who is a full-grown woman in the ripe maturity of her charms, we find a broad, full throat, in which a pronounced thyroid is visible, thus proving that the most classic as well as most critical of people concurred with us in recognizing its development as one of the integral elements of adolescence. But the impetus that puberty gives to the lymphoid organs everywhere is too well known to need repetition here, and the first menstruation is only one result of the general process.

So much for the characteristics of the tissue itself ; now for its arrangement.

Bound firmly to the inner layers of the muscular wall, the human endometrium is perforated in every direction by the so-called glands, whose ramifications convert the whole into a sponge-like mass, all of whose channels lead into the cavity of the body. Its epithelial covering consists of a single layer, which dips into every reduplication of the glandular canals, and thus gives a protecting coat to the soft protoplasmic tissue.

When the first paper was written I had not had time to go as deeply into the comparative histology of the endometrium as I did during the following year. The result of that work was a paper read for me before the British Gynecological Society just one year after the one from which I have just quoted, on the "Endometrium in the Cycle of the Rut." You will find this paper in the *British Gynecological Journal*, June, 1887.

In that I say that the work necessary to the production of the various forms of placenta must necessarily be different in each, and the conclusion drawn from it is that animals in whom the rut occurs at stated times have a very different histological condition from those in which it is omnipresent.

The condition necessary to the production of the placenta is the one which is common to all, and that is what is known as the adenoid state. This adenoid state is what I have just described as being the condition which is always present in the child-bearing uterus of the human.

In the dog, where I made my most careful researches, I found that at intervals half-way between the periods of the rut the

endometrium is more like an ordinary mucous membrane, but the nearer you approach to the end of the cycle the more closely does the canine endometrium approach that of the human being. This I also found to be the case in the herbivora and various other carnivora.

What becomes of the corpuscular development when pregnancy does not ensue? would naturally be your first question. The answer to it is found in the tremendous lymphatic supply to the endometria of all horizontal animals. The rich granulation tissue which has sprung up from its threads, and been put in that condition from which the myeloid state is most easily reached, whenever ripe is absorbed by the lymph radicals and washed away in a lymph stream.

But in the human being, where the rut is always present, where, from the erect position, no such thing as the loose texture necessary to a lymphatic network can be used, some other method must be employed to get rid of this redundant growth of lymphatic corpuscles. This is accomplished by the blood stream, so that the proper place of the endometrium is alongside that of the spleen. And we may say that in all other animals the lymph current washes away the over-ripe material which has not been used in the manufacture of placenta; whereas in the human being it is gotten rid of by menstruation.

So, then, in the physiology of reproduction we must regard the adenoid state of the endometrium as about corresponding to the condition of the osteoblast in the production of bone. The first step in the manufacture of bone is the melting of the osteoblast into the myeloid condition previous to the formation of the Haversian systems.

The first step in the manufacture of the placenta is the melting of the corpuscles into the myeloid state previous to the manufacture of the giant cells of the placenta. Whether the placenta be the single, the multiple, or the diffuse, this condition must be common to all, and to the adenoid condition must all endometria come before the myeloid condition can be reached.

So, then, my belief is that the erect position is the prime cause of menstruation, and that it is brought about by the control of the nervous system, and not by that old time-worn physiological monstrosity, "ovarian influence."

To me, in Stevenson's "anti-menstrual" pressure is a perfectly satisfactory solution for the physiological mechanism of this flow. It would be just as rational to expect one of the Nabothian follicles or any other little epithelial mass to be the centre of control from which this general process germinates, as to expect it from the ovary.

It has long ago been proven that all glandular function is directly under the control of the nervous system, and to me it seems a gross imputation on all other physiological processes to expect one which involves the whole system to such an extent to originate in a little epithelial lump which has so few nervous centres, and whose functions have been proved long ago to begin before birth and to last to great old age. If the ovary controls the uterus, why is it that this control begins thirteen years after ovarian activity starts, and stops at forty-five, instead of lasting through life, as we know full well is the history of the production of Graafian follicles? As I stated in a debate at Nashville last October a year ago, I do not believe the ovary has one bit more to do with menstruation than the clitoris has.

In the paper so often referred to, I attack the next question which will be so apt to arise in your minds, and that is, the shedding of the whole endometrium at each menstruation. As I there proved, this is positively a mistake, as there is only a loss of the single layer of the columnar epithelium, which lines the cavity of the body and the utricular follicles; besides the shedding of the over-ripe corpuscles already spoken of. This desquamation does not go entirely to the bottom of the utricular glands, but is most marked near their orifice, and is absolute for the whole cavity of the body. But the wholesale shedding of the whole endometrium, as described by Williams, I have proved to be due to the specimens which he examined, all of which, from his own history of them, you can easily see are in a pathological condition.

It would take me too far into an entirely different subject to give you my views on the regeneration of this epithelium; but I can briefly say that I am confident, in spite of the doctrines heretofore taught in Remak's law, that this epithelium springs directly from the lymphatic layer, and not, as has been heretofore taught, from the remnants of older epithelium. In

a paper that I read before the Leeds meeting of the British Medical Association in August, 1889, I proved, to my satisfaction at least, that the ordinary teachings of Remak's law are fallacious, and that the feather and hair do not grow from epithelial tissue, but directly from a lymphoid bed whose construction is very similar to that of the lymphatic gland. Or, in other words, that the hair papilla and the feather papilla are undoubtedly of the adenoid nature, and not epithelial structures as has been heretofore taught.

And from this I also found that directly subjacent to the rete mucosum lies a very thin layer of this same adenoid tissue, and that from it normal epithelial waste is supplied.

To go deeply into the histology of the subject would take too much of your valuable time, and I can only here say that the epithelial lining of the uterus, in my belief, is repaired directly from the connective-tissue structures which underlie it. This, I know, to many of you is rank heresy; but at the proper time and place I am prepared to prove it to your full satisfaction.

My conclusions are that the necessity for menstruation is brought into zoölogical history by the erect position, and that its purpose is simply to wash away the over-ripe material which, by force of circumstances, has failed to make a placenta.

UNIQUE CASE OF CESAREAN SECTION.

BY

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ON the 27th of April, 1890, I was called to see Mrs. J., the messenger stating that she was in labor, the waters having come away. I found her a vigorous little woman, 27 years of age, fifty-five inches in height. She was in the ninth lunar month of her sixth pregnancy. The first four pregnancies ended in miscarriages. The fifth pregnancy was terminated

by Cesarean section, done by Dr. Howard A. Kelly, April 17th, 1888. A full account of this operation can be found in THE AMERICAN JOURNAL OF OBSTETRICS for March, 1890 ; but, as it has a distinct bearing on the case, a brief account of it will be given.

During the labor of her fifth pregnancy Mrs. J. was successively in the hands of a midwife, a physician, and two physicians in consultation. The grave nature of the case was not recognized, and the attendants waited for two weeks for the cervix to dilate. At the end of two weeks Dr. Kelly saw her in consultation. The pelvis was found choked with inflammatory exudate, which made an absolute barrier to delivery *per vias naturales*. Cesarean section was done, as affording the only hope to the patient for life. At the time she was profoundly prostrated, with a pulse of 142. A feeble, jaundiced infant was delivered, which lived a week. As a result of the conditions present at the time of the operation, the uterine wound became infected; circumscribed peritonitis, with adhesion of the womb to the abdominal wall, resulted, and later a breaking down in the line of union in the abdominal wall and uterus occurred, and thus a utero-abdominal fistula formed through which the uterine contents discharged externally. The cervix broke down, and half of it came away in a slough. The patient had a narrow escape, but recovered. The fistula never healed soundly ; at times it would heal, only to break down at a menstrual period to allow of the escape of some of the menstrual blood. The patient's general condition became good, and the pregnancy resulted which is the subject of this communication.

On examination I found that the membranes had ruptured, and that the waters were coming away through the ventral fistula, which was dilating under the influence of the feeble pains which were present. The cervix was scarcely at all dilated, and the os could be felt surrounded by cicatricial tissue left from inflammatory processes attending the preceding labor. It seemed plain to me, from the condition of the soft parts alone, that, were spontaneous labor possible, the child would be delivered through the ventral fistula and not through the vagina. The scar from the former Cesarean section was found quite stretched out by the intra-abdominal pressure. The recti

muscles were separated about one inch. The fistula was situated about midway between the pubes and the umbilicus. Projecting through the fistula a process of amnion was plainly seen. The child lay in the third position. The head was quite movable above the superior strait. The fetal heart tones were easily heard, showing that the fetus was alive, though it evidently was quite small and immature. The soft parts of the pelvic outlet were those of a nullipara. The cervix formed the centre of a mass of scar tissue. The lateral pelvic walls were easily palpated; but, owing to the scar tissue back of the cervix, it was difficult to reach the sacrum.

The pelvic measurements are as follows: A. S. S., twenty centimetres; Cr. I., twenty-five centimetres; D. B., fifteen centimetres. The conjugate diameter cannot be taken, owing to the fixation of the cervix.

Knowing the condition of the pelvis and the former history of the patient, I concluded that the treatment which offered most to both mother and child was prompt Cesarean section. The patient and husband, impressed by the nature of the preceding labor, gladly accepted my advice. Preparations were made at once to remove the patient to the Kensington Hospital for Women. Dr. Robert P. Harris saw Mrs. J. with me in consultation, and agreed with me in urging prompt operation, which was done under strict asepsis.

The technical details of the operation were unique. My index finger was inserted through the fistula into the uterus, and upon this as a guide I incised the uterus and abdominal wall above and below the fistula with the knife and scissors as far as the region of utero-abdominal adhesion. Sufficient room not being afforded, the peritoneal cavity was opened and the uterine incision prolonged upward; a leg of the fetus was now seized and the fetus turned and delivered. It was feeble and immature (thirty-third week), and lived only a few hours.

The placenta and membranes were found strongly adherent, and it required some time to remove them. In the meanwhile hemorrhage was quite free and could not be controlled in the usual way, by the assistant grasping and compressing the cervical region, because of the intra-abdominal fixation. I quickly inverted the uterus through the operation

wound, which enabled the assistant to grasp the lower uterine segment and control the bleeding, while I peeled off the secundines. The finger was now passed through the cervix to provide a vent for the lochia. The walls of the fistula were excised, and the uterine incision closed by fifteen deep and seven superficial stitches. Some of the deep stitches passed through both uterine and abdominal walls, through the region of uterine adhesion. This fact accounts for the small number of superficial stitches used. The uterine wound was closed in twenty-nine minutes. The peritoneal cavity was now cleansed and the remaining sutures introduced. The patient was put to bed without shock. The convalescence was rapid and uninterrupted. Primary union of the operation wound was obtained; and, although a number of the buried uterine sutures have been discharged, the fistula has not re-formed.

Several features of this case make it of more than ordinary interest. I believe that the operation is unique, both in its indication and in its technique. I have failed to find any reference to a second Cesarean section done upon the same woman in whom a utero-abdominal fistula has resulted from the first Cesarean section; also, the necessity for terminating the pregnancy at the thirty-third week because of the escape of the liquor amnii through a utero-abdominal fistula, and the fact that, had it been possible for nature to expel the fetus, its exit would have been through the fistula, are matters peculiar to this case.

The case is of further interest from the fact that Mrs. J. is the second woman in Philadelphia to recover from the Cesarean operation; curiously enough, the subject of the first Cesarean section in this city also had two operations and likewise recovered from both, the operations being done in 1835 and 1837.

Practically, the most striking feature in the case is the difference in the convalescence after the two operations—the first done late, under desperate circumstances; the second done early, when the woman was in good condition. It is but another illustration of the folly and hazard of delay, and but another argument for early diagnosis and prompt operation.

ACUTE HYPERTROPHY OF THE MAMMARY GLANDS.

BY

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(With plate.)

THE following case is interesting on account of its rarity, and because of the rapidity of growth and the unusually large size which the mammary organs attained. So far as I have been able to learn from the literature at my command, it is the largest and most rapidly developed case of hypertrophy of the breasts on record.

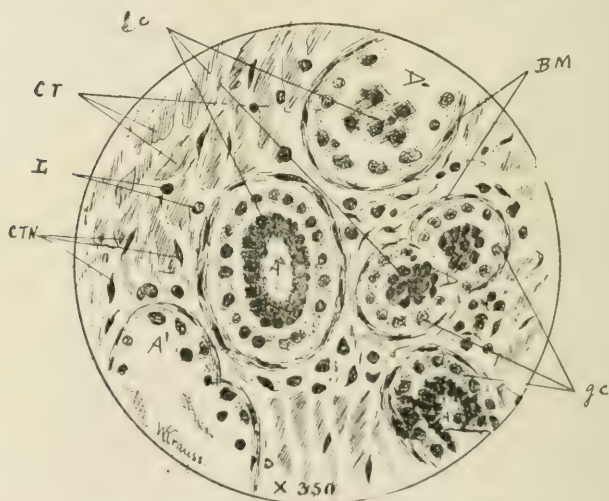
Mollie H., age 15 years, was brought to me in the last of August, 1890. When she was but a few months past the age of 14 she experienced her first menstruation. At this time she was suffering with influenza and mumps. Menstruation at this time and subsequently was normal. Prior to puberty the breasts presented nothing unusual, but shortly afterward the mother noticed that they were unusually large, and soon the enlargement amounted to a deformity. A physician was consulted; none of his remedies were of avail in checking the excessive growth, which continued until she was placed in my charge. At this time the measurements of the breasts, in inches, as taken by Dr. A. B. Holder, of this city, were :

	Right.	Left.
Circumference at base.....	23	24½
Circumference midway between base and nipple.....	27½	31
Circumference from front of base over nipple, and back to starting point.	32½	35½
From sternal to axillary side of base over nipple.....	27	29
From base above to base below over nipple.....	22½	24

I shrank from sacrificing the breasts of a girl just budding into womanhood, and, although the authorities said there was nothing to be done in such cases except amputation, I made a thorough trial of compression. With the assistance of the nurses and Dr. Holder, bandages were applied for two

weeks. At the expiration of this time the breasts were quite as large as when we began. The operation was now determined upon. Lateral flaps were made. The bases were large, the organs were quite vascular, so it was impossible to avoid hemorrhage from the slightest cut into the gland. There was almost no cellular tissue and fat between the skin and the gland. No doubt these had been absorbed on account of the pressure from the large and rapidly growing organ.

Realizing that there would be a large quantity of blood lost should the use of the knife be continued, this instrument was laid aside and the closely adherent skin was peeled off from



MICROSCOPICAL SECTION OF TUMOR, 350 diameters.

A, acini nearly normal, but dilated; B M, basal membrane; *gc*, gland cells, margins of which are undefined, protoplasm and nuclei granular; *lc*, cells lying in lumen, result of proliferating activity of *gc*; A', acini disarranged by pressure of connective tissue; C T, connective tissue split coarsely cloudy,—degenerated strictly diagrammatic; C T N, connective tissue nuclei.

the gland by the use of the handle of the knife and the fingers. In a similar manner the gland was removed from its attachment to the pectoral muscles. The sheath of the muscle was brought away with the breast.

There was one fact connected with the operation which surprised and impressed me—this was the absence of bleeding vessels at the base. Remembering the fact that the mammary glands receive good-sized arteries from the inter-



ACUTE MAMMARY HYPERTROPHY.—CROFFORD.

nal mammary, from the intercostals, and from the thoracic branches of the axillary in their normal condition, then taking into consideration the greatly increased blood supply incident to this large and rapid growth, we were prepared to ligate some formidable vessels at the base; but to my surprise there was no bleeding beyond a moderate oozing, and I was forced to the conclusion that these glands drew by far the greater part of their nutrition from the vessels entering through the skin.

In looking at the photograph the superficial veins can be plainly seen. Taking this fact into consideration, might it not be worthy of a trial, early in the progress of a similar case, to dissect up the skin and then replace it in its former position, hoping to change the abnormal nutrition and cause a shrinkage of the organ by interfering with its blood supply?

The right gland was amputated September 16th and weighed thirteen pounds. The left was removed October 2d and weighed eleven and a half pounds. Two weeks later she returned to her home in good health, and has had no further trouble.

Dr. Wm. Krause, of this city, has kindly prepared a report of the microscopical examination of these breasts, as follows:

"The tumor sent me for examination is one of those rapidly-growing, circumscribed, benign neoplasms which have been variously styled diffuse adenoma, acute fibro-adenoma, acute diffuse hypertrophy, etc.

"Macroscopically it appears like a fatty tumor, doughy to the touch, but rather more nodular, with firm centres. On section it looks white, with very few vascular spots, soft in portions. The exuding juice consists of fatty granular cells. Some portions resemble fibroma. Near the base of the tumor, and a little to one side, a pink mass the size of a walnut was found, differing from the balance of the growth both in gross and microscopic appearance.

"Under a low power the tumor is seen to consist mostly of fibrous stroma without fatty tissue, the gland tissue being in places normal, but everywhere pervaded by the fibrous matrix, showing every gradation from simple increase of stroma to complete destruction of gland, loose epithelial cells being imprisoned as in a very firm scirrhus. For the most part it

looks like fibro-adenoma, the cells lying in open spaces, often arranged in concentric layers surrounded by a wall of firm fibrous tissue.

"Under a high power the connective tissue can be seen to split roughly, the bundles interlacing by a line or cloudy space, with very few nuclei. The acini are in some places nearly normal, though apparently dilated and filled with deeply staining cells arranged in one or more layers. Numerous lymph channels pervade the mass, and here the process of formative tissue generation can be seen in all stages.

"Osmic acid preparations show a few minute fat globules scattered through all the tissues.

"The macroscopically pink portion differs from the main mass principally in not having any normal gland tissue in it; the acini are only masses of highly staining cells without any effort at arrangement. The stroma is characterized by a large number of nuclei, the connective tissue being embryonic in appearance; a few nuclei give the impression of being those of unstriated muscle, particularly around the epithelial collections which take the place of acini. In the place of duct lumina there are open spaces in the spindle-celled stroma, filled with the same dark staining cells found in the more normal acini and ducts. We thus have a rapid growth simulating cancer, adenoma, fibroma, and hypertrophy, but yet not corresponding entirely to any of these.

"The points of difference between this and the one described by Billroth in one of his two cases are the entire absence of glandular activity beyond the proliferation resulting from direct pressure, and the relatively smaller amount of normal gland tissue. We have, in the pink portion described above, very probably one of the "sarcomatous nodules" spoken of by Billroth in his case. Billroth's description coincides with this more than the diagram given, for in no portion of this growth are the acini so abundant, and I doubt if physiological activity were possible to any extent in this case, certainly not an increased one, without which there can be no true hypertrophy.

"Acute diffuse hypertrophy is no doubt a good name clinically, but histologically we have every evidence of

primary hyperinosis without any signs of irritation—round-cell-infiltration, the gland-cell proliferation being secondary.

“The extreme coarseness and interlacement of the fibrous tissue stamp it as a neoplasm.

“The most remarkable point in the histology of these tumors is that they are in every respect diffuse as far as the mamma is concerned, but do not invade the surrounding tissues.”

ON THE FREQUENCY OF CHRONIC DIARRHEA IN WOMEN : ITS CAUSES AND TREATMENT.¹

BY

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As this Society is concerned in the study of diseases peculiar to women, I think that the discussion here of the subject of chronic diarrhea as affecting women is not out of place and not without interest; for, both in its history and in the difficulties which beset its cure, it has in women peculiarities which distinguish it from the same disease in man.

The time will probably come when the internal pathology of women will have equal place with her surgical pathology, and when lecturers and books will devote as much attention to her specific medical diseases as to those which require the pessary and the knife. As a matter of fact, there is probably no organ in the body which has not some distinctive pathological features in women. Even if the liver, spleen, and kidneys are not known to be specifically altered in them, the marked and singular pathology of the female nervous system, through which all other organs are disturbed in peculiar ways, receives and deserves particular description.

The chronic intestinal disease which is the subject of this paper is a fair example of the fact that other organs besides the nervous system may be affected in women in such ways as to require separate description.

¹ Read before the Washington Obstetrical and Gynecological Society, May 16th, 1890.

Chronic or frequently recurring diarrhea is a very common disease in women ; but, like many other designations, that of "chronic diarrhea" is very inadequate to express all the pathological features, or even the principal symptoms, of the disease in question: it points only to *one*, and that one by no means its most important characteristic.

CASE.—Mrs. X., æt. 50, had always enjoyed good health up to the time of her marriage, which occurred at the age of 25. After the birth of a child she remained well, but the death of her husband after a short illness produced a state of temporary ill health. At the age of 34 she was again married to a man somewhat older than herself, of a very superior order of intellect. At this time her health was good, she was anatomically sound, but there was some physiological peculiarities in her nervous organism which deserve mention. She was exceedingly bright, even intellectual ; all her manifestations of nervous force were marked by an intensity and energy which rendered her most agreeable in society and to her family and friends ; but she suffered penalties whenever her emotions or sympathies were unduly excited.

Two children were born from this second marriage, and when the eldest was a few years old the husband was paralyzed and for some years required her most constant care. Before his death and after, the elder child suffered from chronic disease, from which, after several years of suffering, he died. The strain upon the emotions as well as upon the endurance of the mother, under such circumstances, can well be imagined. Following the death of the elder child, the younger began to have attacks of periodical vomiting, which lasted during five years, and which resisted all efforts to interrupt or shorten them. During these attacks the mother was constantly in attendance, endeavoring hopelessly to give relief, and suffering herself, in a different way, quite as much as the child. Such a life of periods of repose, alternating with days of great anxiety and excitement, involved interferences with the regularity of all the functions, especially with those of sleep and nutrition. For several nights she would lie awake nearly all night, would rarely leave the child's room, taking her food irregularly and without appetite. During these years the greatest changes were brought about

in Mrs. X.'s organism. There was much loss of flesh, anemia became decided, attacks of gastric indigestion were frequent, and the bowels were irregular, but more frequently constipated. The nervous system became very irritable, she exhibited morbid fears as to her own health and the health of those around her, was easily influenced by the presence of relations and friends, by business matters, etc. There was a constant expression of anxiety in her face, the muscles about the eyes and mouth being in a permanent state of tension.

I was first consulted when all cause of anxiety had ceased, and when the strain of nursing and watching was over. Her body at this time was badly nourished. The countenance was as I have described it. There was anemia; the skin was muddy rather than pale. The nervous system was centrally and peripherally disturbed. There was no loss of intellectual vigor, and in conversation she was as agreeable as at any time; but she showed great anxiety about her health, and her apprehensions ranged over a wide area. Sleep was irregular and never profound. There was a tendency to neuralgic pain in different parts of the body, to numbness and twitching of the extremities; slight causes would produce much "nervous exhaustion."

In the *digestive system* the symptoms were: Inability, or unwillingness (which was based upon the supposed inability), to take food in any variety. She confined her diet to rare beef, toast, and weak tea with milk. The slightest departure from this dietary was always, I was assured, followed by indigestion. The bowels were moved usually once a day. Examination of the stools showed that they consisted of normally consistent fecal masses, frequently associated with ribbon-like shreds of mucus. Such a condition would be interrupted by frequently recurring attacks of diarrhea accompanied by intestinal pain; several movements occurring during the day, unless checked by remedies. This diarrhea, in the mind of the patient, had grown to be the most alarming symptom, and to its prevention all her efforts had been directed. The causes which immediately brought on these attacks were of two kinds: fatigue, nervous excitement, pleasurable or otherwise, and exposure to cold or sudden changes in the weather.

Physical examination of the abdomen showed no change;

there was occasional tympanitic distention. The urine was usually perfectly normal.

The history clearly shows that inherent peculiarities in the nervous system, associated with the great strain of years of anxiety, nursing, loss of sleep, irregularity in every habit, led to disturbances in the digestive functions and to alterations in the anatomical state of the digestive organs, so that now we have three principal features in the case:

1. An irritable nervous system.
2. Indigestion of food, chiefly in the intestine; chronic catarrh of the colon, with the production of excessive secretion, which shows itself in the discharge of mucous shreds or fluid matter.
3. Imperfect tissue nutrition and anemia.

This may be taken as a fair sample of the mode of development of such cases, and the relation which they show between the gastro-intestinal symptoms and the nervous system. That there should be such a close relationship, and that prolonged nervous strain should lead to altered digestion, and finally to organic changes in the gastro-intestinal mucous membrane, is readily explained and easily understood.

Without going into fuller detail in explanation of the mode of origin of such cases, it may be said that at some time or other there comes into play another agency in exaggerating the intestinal catarrh and in bringing about recurring attacks of diarrhea. This is the effect of *cold* upon the skin. In the patient whose history is given, there is the greatest susceptibility to external temperature variations, and in all cases of this nature this relationship may be noted. Sudden slight changes in the weather will bring on attacks of diarrhea in those who are thus predisposed, and such patients learn to avoid a cause which experience teaches them almost invariably produces its effect.

The *diagnosis* of the pathological grouping of symptoms such as I have described is made with some difficulty, and it is in cases of this kind that differences of opinion are expressed and the most opposite methods of treatment suggested. It is a complex disease, of which diarrhea becomes the most distinct symptom to the patient, and indigestion and innutrition the chief obstacles to cure; so that, while I have spoken of the disease as chronic diarrhea, I am well aware

that this term is incomplete and defective. It is not neurasthenia with indigestion and diarrhea; for although in the case recorded here there was neurasthenia, yet this condition was subordinate to the emaciation, anemia, and the digestive disturbances. In many cases of chronic intestinal catarrh with diarrhea in women, the nervous symptoms are not as much a part of the disease as is here represented. But I cannot recall a case in which nervous phenomena did not play an important rôle.

Is such an association of symptoms to be classed with membranous enteritis? In that disease the nervous system is supposed to be the primary seat of changes of which the discharge of membranous shreds from the bowel is the sequel; constipation is invariably present. The two forms of disease are closely related. In one the membranous discharges are an abnormal intestinal secretion due to nervous influence; in the other the diarrheal stools or mucous discharges are proofs of catarrh of the colon, which has been largely brought about by nerve strains and storms.

The form of diarrhea here described must be distinguished from that due to uterine retroflexion, to perineal laceration involving the sphincter, and to rectal hyperesthesia.

The *pathological anatomy* of chronic diarrhea in women is probably the same as in men. There are no data by which a comparison can be made between the lesions in the two sexes.

The *prognosis* can never be definitely made until well-arranged plans of treatment have been tried for some time. From their effect some opinion can be formed as to the probability of cure; but in no instance can a definite opinion be given of the ultimate result, unless the patient is very submissive to directions and very faithful in carrying them out. One year is as short a time as could be fixed upon for the expectation of a cure under the most favoring conditions. But much longer than this will be required in many instances to complete a cure, and often years will pass, with alternate changes from worse to better, before health is entirely restored.

The *treatment* includes the regulation of the entire life of the individual; and one of the first problems presented is as to where the patient shall live—what climate is best. Sea

and mountain air are equally unsuitable, as here we have dampness and sudden changes of temperature, both of which are injurious.

The climatic conditions most desired are purity of atmosphere, equability, and dryness. Wind must be avoided, and, therefore, a very elevated or mountainous region is not the best. Between a cold climate and a warm one, warmth is to be preferred; warmth and dryness are better than a low temperature, no matter how dry the air may be. Denver and its neighborhood combine elevation, dryness, and equability. The summer climate of Colorado, with a mean temperature of 69.1° , a mean relative humidity of 50.8° , a mean absolute humidity of 3.68 grains of vapor to a cubic foot of air (Washington having 6.25 grains to a cubic foot), is a type of what such a climate should be. In other words, the same conditions of climate most suitable to phthisis pulmonalis are most beneficial to cases of this kind. The Adirondack region in summer also meets the indications; and the pine-wood region, recommended by Loomis and others, is beneficial, not because of the balsamic properties of the air, but because the dry soil of these localities is so beneficial. The frequent low temperatures here are objectionable.

For a winter climate, Augusta or Thomasville, Georgia, or Aiken, South Carolina, offers warmth and more or less equability, but in the East there is no typical winter climate. All the advantages here suggested can be found in California away from the seashore.

For those who travel, Europe has many favorable localities, and here, as I have said before, the climate and surroundings most suitable to phthisis are most desirable. Nice, Mentone, and the Mediterranean littoral in general are not so advantageous, on account of the too great humidity; and yet the more quiet Mediterranean winter resorts have such a charm for the American seeker after health that great good often comes from a prolonged residence there. In general terms, change of scene, with the relief to nervous, depressing emotions and the exhilaration of new surroundings, may be advised in all such cases, if the route selected is in season and the climate not positively prejudicial.

For the large class who are unable to leave their homes,

dampness, excessive humidity, and alternations of temperatures must be avoided. The greatest possible precaution should be taken against cold by the wearing of woollen underclothing in all seasons, and in having the environment of house and outdoor life made as suitable to the patient as is possible.

Food.—As all these cases are imperfectly nourished, and as a restoration of the blood to a normal state is so necessary to cure, the question of diet is of the highest importance. The peculiar susceptibility of the mucous membrane to acute or subacute catarrhal attacks, and the state of morbid apprehension of illness in which these patients live, offer great difficulties in the way of keeping up the proper dietary. It often happens that those suffering in this way find out, after long experience, that such and such articles are well borne and well digested, and, therefore, they continue to take the same foods, without variation, during prolonged periods; they become very unwilling to take a more liberal diet, and are afraid to introduce any new articles of food into their usual daily regimen, feeling quite sure that illness will follow.

It is not often that they require an absolutely liquid diet, or one of milk alone, except during subacute attacks; under these circumstances a milk diet and predigested foods are necessary. But at other times, when the disease is pursuing a decidedly chronic course marked by one or two soft or watery movements daily, the diet may consist of rare beef or mutton, breast of chicken, sweetbreads, with stale bread, rice and milk, broths, and koumyss or matzoon. Such a diet as this, persisted in for a very considerable time, will be very beneficial. The great temptation, and one to which the physician is more exposed than the patient, is to vary the diet too soon, and, after a short period of improvement, to permit the use of less easily digested articles of food. A physician's word should be law, and a law made so plain and extending over so long a period of time that a complete recovery is attained by a prolonged absence of intercurrent congestive and catarrhal conditions. The patient should be well for over six months or a year before she should be considered well enough to do without the physician's care; and even during the rest of her life there should be more or less adherence to diet and avoidance of known indigestible articles of food.

Aids to Digestion.—The hope of accomplishing anything by aids to gastric or intestinal digestion is almost wholly illusory; the administration of pepsin and hydrochloric acid is sometimes followed by apparent benefit. Whether the pancreatic preparations ever accomplish the desired end is doubtful, but, at the same time, we would not be justified in not availing ourselves of all such helps, although our faith in them may have little or no foundation in fact.

Medicinal Treatment by the Mouth.—The indications are to restore the mucous membrane to its normal state as to blood supply, thickness, and secretion. Of course all the suggestions that have been made have this end in view, and more especially the regulations as to diet. Certain drugs have a reputation and deserve trial; most of these, as may be supposed, are astringent in their action and tend to reduce congestion of the superficial vessels of the mucous membrane. But it can readily be seen that a drug of this character, which is intended to act upon the mucous surface of the colon at a long distance from the point of entrance into the digestive tract, should be given for a very considerable time, and in doses repeated with sufficient frequency to bring about an influence upon the surface. Nitrate of silver has had an extended trial, and has the warm indorsement of many well-known practitioners; it is given in small doses, one-eighth to half a grain, in a capsule or pill, three or four times daily. The danger of producing the silver stain on the skin is an objection to the prolonged use of this drug, for such result has followed a six weeks' administration. Oxide of zinc, in two- to four-grain doses a day, has somewhat the same effect with less risk. The same commendation may be given to some of the preparations of iron and other well-known astringents and to dilute sulphuric acid.

A more pleasant way of administering an astringent is in the form of mineral waters containing alum, as that from the Rockbridge Springs in Virginia. The frequent sipping of this water, in small quantities at short intervals during the day, can be kept up for a long time, and with less inconvenience and greater efficacy than when the astringent is taken in the form of pills or powders. The alum water is also very palatable, and the patient frequently gets to like it. A

great obstacle to benefit from the administration of the remedies for chronic diarrhea is that the discouragement from the absence of an early appreciable result causes the abandonment of the drug and the beginning of another experiment; but a disease which has already lasted for years is not likely to be cured by a few weeks' trial of any remedy, and the persistent and persevering use of any proper drug should be the principal point in treatment.

Medicinal Treatment by the Rectum.—As the chief seat of the disease is in the colon, treatment by the rectum would appear rational. It is certainly true that, even if fluids thrown into the rectum do not reach the colon, the beneficial effect upon the rectal mucous surface is followed by a corresponding improvement in the tissues above. It is seldom, too, in such cases, that the rectum is entirely free from disease. Irrigation, therefore, of the rectum by water, or by water containing various astringents or antiseptic materials, can be easily carried out. But it is necessary that such irrigation should be attended by free egress of the fluid injected. To accomplish this a double hard- or soft-rubber tube should be employed. As a substitute for this, two soft-rubber catheters, placed side by side in the rectum—a smaller one, No. 8, for the entrance of the fluid, and a larger one, No. 10 or 12, for its escape—will answer the purpose. A Davidson syringe is far preferable to a fountain syringe. In cases where mucus is passed in large quantities, in shreds or masses, or where, from the amount of fluid discharged or from its character, the colon is known to be the seat of a decided lesion, the water should be made to pass into the colon through the sigmoid flexure. While as yet no method has been devised which will permit the easy entrance and exit of the fluid when thrown beyond the flexure, yet the soft-rubber double stomach tube can be tried, and sometimes successfully. But even if we do not secure a free and immediate escape of the fluid from the colon, the effort to medicate its mucous surface should not be neglected. The irrigation should be made with water boiled and filtered, or water holding in solution boracic acid or other unirritating antiseptics. Weak solutions of alum or sulphate of zinc, or, in more obstinate cases,

a solution of nitrate of silver, three grains to a pint, may also be tried.

These opinions are largely suggestive and must be modified to suit individual cases. It is very clear that treatment by the rectum and colon will be the treatment of the future for chronic colitis, when we shall have overcome the mechanical difficulties by proper instruments.

HYDRAMNIOS IN THE EARLY MONTHS OF PREGNANCY, WITH ILLUSTRATIVE CASE.

BY

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THE existence of an excessive amount of amniotic fluid during the earlier months of gestation is a subject which, curiously enough, the most of our standard works on midwifery either fail to consider altogether, or merely leave us to conjecture its possible occurrence, without giving any definite data to go upon.

Thus Lusk, for example, makes no mention of its occurrence, while Playfair merely states that "it rarely begins to show itself before the fifth or sixth month of pregnancy."

That it is of so little importance as to warrant so scant attention I am not disposed to admit—a contention which has been intensified by an example of this interesting abnormality coming under my notice a few weeks ago.

A multipara, age 35, ceased menstruating in the beginning of August last, and during the entire month of September suffered from excessive vomiting, which sedatives of various kinds failed entirely to relieve. In the second week of October the vomiting ceased entirely, and, as menstruation still remained in abeyance, she naturally concluded she was pregnant. Regarding the veracity of this conclusion she, however, became somewhat doubtful in December, firstly, on account of the absence of fetal movements; and, secondly,

because she did not consider she was increasing in size as she was wont at the fifth month of her pregnancy. A climax was reached, however, on the 10th of January, when she was suddenly seized with pains and hemorrhage, and, on sending to the Dispensary for medical aid, a pupil of mine immediately attended her. On his arrival he was told that something had come away, and on lifting the bed-clothes he found lying in the bed a large cyst. In spite of the discharge of the cyst, the hemorrhage and pains continued for more than an hour, till, by the energetic application of hot water and suprapubic pressure, he succeeded in expelling from the uterus a large, fleshy mass. This with the cyst he brought to me for examination.

The cyst was spherical in shape, and measured three and a half inches in its diameters. The wall was extremely thin and translucent, while it contained a turbid fluid, no vestige of a solid body being present.

The fleshy mass proved to be an entire uterine decidua, distinct portions, corresponding with the cavities of the body and cervix respectively, being apparent, the body portion being lined on its internal surface with a transparent membrane (the chorion). This was adherent over its entire surface, no special localized adherent portion being present, while one portion of the decidua, corresponding to the fundus uteri, was considerably thicker than the rest, this, no doubt, being the decidua serotina.

Microscopic examination revealed large numbers of villi present over the entire decidua, upon which the chorion rested. The decidual cells were in most part undergoing fatty degeneration, while the intercellular substance was infiltrated with a large amount of granular exudation.

The cyst, therefore, could be nothing else but the amnion filled with liquor amnii, in which complete liquefaction of the embryo had occurred.

The specimen as a whole would appear to be, therefore, an ovum blighted probably about the end of the second month of its growth, but which had been retained in utero by the abnormal adherence of the decidua to the uterine wall—a condition quite to be expected from the microscopical appearance of that membrane, the granular infiltration suggesting

inflammatory changes which have usually an adhesive tendency.

That the growth of the ovum cannot have much exceeded two months is proved by the existence of villi over the entire chorion, these by this time, under ordinary conditions, being atrophied, except at the localized decidua serotina, where they eventually aid in the formation of the placenta.

This early period of death of the ovum is also strongly supported by the complete liquefaction of the embryo, such being unknown in embryos of greater age.

Granted, then, that the ovum was but two months old, its dimensions, which were about three times that of a normal ovum at this period, seemed to be entirely due to an excessive amount of liquor amnii; and that this was secreted during the second month of gestation, and was the essential cause of the death of the embryo, entirely coincides with the clinical history of the case, viz., the excessive vomiting and its complete and somewhat sudden cessation. That the liquor amnii increased after the death of the embryo is an assumption which may be advanced. But it seems to me that the clinical evidence of excessive vomiting (a symptom with which the patient had never before been troubled in previous pregnancies) goes a long way to support the theory of rapid and excessive distention of the uterus in the second month, and that the case was one of early hydramnios.

In using the term "hydramnios" in such a case as this, I do so accepting the definition of the abnormality as stated by Lusk, namely, "the term hydramnion should be restricted to those cases in which the amount of fluid is so large as to produce morbid symptoms by its pressure upon the uterus, the abdominal and thoracic viscera, or the fetus." It is therefore an indefinite quantity, varying at different periods of gestation, and cannot be estimated by volume, as Kidd¹ recommends, or by weight, as stated by Charpentier.²

In the case just described there can be little doubt that morbid symptoms were produced, both on the mother and embryo. It is probable that the condition is rare in the early months, but that it occurs sufficiently often to demand more

¹ Kidd estimates it at two quarts.

² Charpentier at five pounds.

attention I feel convinced, and it is with this object I have recorded the case in detail.

Specimens of this condition are to be met with in many museums, while notably, as stated by Priestley,¹ a specimen identical with that I have just described is to be seen in St. Bartholomew's. My specimen, I may state, I exhibited to the Edinburgh Obstetrical Society.

The mechanism of the abortion in my case deserves special notice, as, so far as I can learn, it is unique. The expulsion of the amniotic sac entire and alone shows how little organic connection could have existed between it and the rest of the ovum—another argument against the supposition that the secretion of liquor amnii and growth of the ovum continued after the death of the embryo.

IN MEMORIAM.

CARL BRAUN.

ON the 28th day of March last died in Vienna, the capital of Austria, Carl Rudolph Braun von Fernwald. He was born on March 22d, 1823, in a small place in Austria, where his father was a practising physician. After having gone through college, he studied medicine during six years, and graduated as M.D. in 1847. Two years later he became the assistant of Professor Klein at the Obstetrical Clinic, as successor to the unfortunate Semmelweis, the first man in the world who understood the septic nature of so-called puerperal fever and showed how to prevent it. In the year 1853 he became instructor of obstetrics (*Privatdocent*), and was the same year appointed professor of obstetrics, and vice-director—that is, second physician—to a school for midwives in Tyrol. At Klein's death, in 1856, Braun was called back to Vienna to be his successor as professor of obstetrics at the University, and physician-in-chief to a department of the Obstetrical Clinic.

¹ "Pathology of Intra-uterine Death," p. 117.

Two years later he opened a gynecological clinic that soon became one of the great attractions of the Viennese University. In 1887 he was elected first president of the newly founded Gynecological Society, a position which he occupied till his death. It was in this function that he appeared last in public. On February 17th he occupied, in his usual good health, the chair. The next morning he had an attack of bronchitis, to which soon was added weakness of the heart, causing edema and unconsciousness, until death put an end to his active life.

Carl Braun contributed considerably to the obstetrical and gynecological literature of the last forty years. From 1852 to 1855 he was, together with Chiari and Späth, editor of the *Klinik für Geburtshülfe und Gynäkologie*. Later he was one of the editors of the *Archiv für Gynäkologie*. He wrote numerous articles in different journals, on subjects belonging to the domain of gynecology and obstetrics, and in 1857 a "Textbook of Midwifery," in which he continued the good work of his two predecessors, Baër and Klein, who have exercised great influence on the development of the obstetric science and art in German-speaking countries. In the second edition of this work, published in 1878, he included gynecology.

His name is attached to several instruments, some of which are extensively used. Thus, he constructed a syringe for injecting small amounts of fluid into the uterine cavity. If his *colpeurynter* is less reliable in checking hemorrhage than a tampon, it is a valuable aid for increasing labor pains and dilating the vagina when Barnes' cervical dilators have done their work. He enlarged the size of Simpson's cranioclast, and improved it so much as an instrument of traction that it, in the hands of many accoucheurs, has replaced the more dangerous cephalotribe. Braun's *Schlüsselhaken* (i.e., key-hook) is an original, simple, and excellent instrument for decapitating the fetus in neglected cross-presentations.

Braun began as an obstetrician, and his name will probably live longer on the lips of posterity in connection with this branch than with gynecology; but he was among the first in his country to understand the importance of the new science that was being developed on both sides of the Atlantic for



CARL BRAUN.

the benefit of suffering women. He took part in the movement, he propagated the new doctrines among his numerous pupils, and he acquired the necessary dexterity for the performance of the greatest gynecological operations. In his eyes gynecology should be intimately connected with obstetrics, just as he combined the two in his practice and in the second edition of his book.

As a successor of Semmelweis, in the very wards where he had laid the foundation of antiseptic midwifery by enjoining the students to wash their hands with chlorine water before they made vaginal examination, Braun has contributed much to the enormous saving of human life which distinguishes modern obstetrics from that of all previous ages. At the head of one of the largest lying-in services in the world—one that is extensively used for teaching purposes, one that is situated in most unpromising surroundings, and one to which the severest cases are sent from a large circumference—Braun brought the mortality down to less than one per cent.

Braun was an enthusiastic and eloquent teacher, among whose audience might be found students from all countries. His genial ways ingratiated him with the young men. His large experience gave great weight to his opinion in consultation with other practitioners. He acquired a large and lucrative practice. Women from over the whole world sought his advice. He was the favorite of the highest classes of society, was knighted and covered with orders. With knowledge and skill he combined a striking personality and that sympathy with the patient which gains confidence and thus forms the beginning of a cure. For forty years a writer, a teacher, a physician, and an operator, he died in the full enjoyment of his mental powers, honored by his countrymen, admired by his students, and beloved by his patients.

H. J. GARRIGUES.

TRANSACTIONS OF THE NEW YORK
OBSTETRICAL SOCIETY.

Stated Meeting, March 17th, 1891.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

FIBROMA MOLLUSCUM OF THE LABIUM MAJUS.

DR. GEORGE M. TUTTLE presented the specimen, which was accompanied by the following history:

Mrs. M., widow, age 52; IIIpara.

Previous History.—Has always been a strong, healthy woman; no organic disease. For the past year there have been some symptoms indicative of the approach of the menopause, such as vascular disturbances, scanty menstruation, and some nervous symptoms (especially tachycardia).

Present Illness.—Four years ago the patient noticed a lump on the right labium majus; it was first observed while the patient was washing; it was painless and insensitive. From that time it has grown steadily but slowly until reaching its present size. There has been no pain, soreness, sensitiveness, or redness of the affected parts, and the only inconvenience which the tumor has caused has been by its interference with locomotion and the dragging due to its weight. I first made an examination in June of this year, and found the tumor about one-half of its present size. Since that time it has doubled in size, but with no new symptoms aside from the aggravation of those above noted.

Examination shows a pyriform tumor of the right labium majus, narrowed above and rounded below. The tumor measures seven and one-half inches in length, seventeen and one-half inches in circumference. The skin covering the tumor is normal in appearance, though greatly hypertrophied. The tumor is insensitive to pressure; not translucent to transmitted light; no impulse on coughing; no gurgling; no effect from taxis. The feeling of the tumor is as if it contained partly fluid and partly gaseous contents. There is a distinct feeling of fluctuation and somewhat marked tympanitic resonance. In the centre of the tumor one can feel a peculiar, hard, cake-like central mass which feels like a flat piece of cartilage about two and one-half inches square, and which cannot be moved about in the tumor mass; that is, it does not alter its position by manipulation.

I removed the tumor on December 6th, 1890. A long incision was made over the whole length of the tumor from its lower end to the external inguinal ring. The vascularity of the parts was enormous, and the operation rather tedious and difficult. I found the tumor enclosed in a well-defined but very thick sac, on cutting through which the appearance of the tumor was strikingly like gut: thin, translucent, "gaseous" in feeling, and very resonant on percussion. After a little hesitation, and feeling confident of its real nature, I quickly dissected and shelled it out of its sac, and removed the latter by careful dissection from its bed in the labium majus, finally cutting away the large hypertrophied pieces of the latter which are seen in the accompanying specimen. The bed of the sac was closed by an over-and-over buried catgut suture, leaving a drainage tube in the lower angle of the wound, the tube being removed on the third day. The case progressed without fever, and with resulting aseptic union of the wound.

TUBAL PREGNANCY.

DR. TUTTLE also presented a specimen from a case of tubal pregnancy, with the following history :

Mrs. P., seen at office February 19th, complains of want of appetite, nausea, pains in bowels, constipation, some difficulty in urination, very scanty menses in January and their delayed appearance this month.

History Elicited by Interrogation.—Age 32; born New York State; housewife; married thirteen years; never pregnant. First unwell about 14, and every twenty-eight days since with marked regularity, moderate in quantity and duration, and accompanied by severe dysmenorrhea. Health otherwise good, except for some dyspepsia and constipation, until five years ago had an abscess which opened spontaneously on perineum and closed completely under poultice, giving no further trouble; but constipation has been worse since, with frequent and violent attacks of flatulent colic which yield only to enemata, bringing away scybalæ, of which all movements have for a long time consisted. One such attack occurred on January 18th last, and was followed on the 20th by dysmenorrheal pains, menses being then due; but no blood appeared, except slight staining once. Pains continued for some time, though less severe than usual, and finally passed off.

On February 15th another attack occurred, which did not yield to enemata so readily as before, and two "antibilious" pills were taken on the 17th, on which date menses were again due but did not appear. The pills produced a number of small movements consisting of scybalæ and mucus, with

much pain and griping at each act of defecation, but without affording the desired relief.

Yesterday (the 18th) the patient felt, and to-day (19th) still feels, as if about to be unwell, and, feeling anxious about the situation rather than on account of illness, seeks medical advice.

Pregnancy with tendency to abortion is suggested by physician, and apparently confirmed by an examination of breasts, vaginal mucous membrane, and uterus, from the latter of which there is a very slight bleeding, established since patient left home, and not yet recognized by her.

A complete intrapelvic digital examination was not persisted in, owing to pain at the vaginal entrance, of which the patient complained much, and was found to be due to an inflamed meatus and an abrasion or fissure at the posterior commissure; these readily yielded to treatment and disappeared within a few days.

The uterus was found to be enlarged, anteflexed, and movable; no fulness or tenderness posteriorly or laterally was recognized.

The patient was directed to go to bed and remain there and cease interfering with the bowels.

Patient stated that opium made her sick and caused severe vomiting, and begged that none be given her; it was, therefore, withheld and *viburnum prunifolium* given instead.

Saw patient at her home at 11 p.m.; still suffering somewhat. At midnight colicky pains, quite severe, induced her to try a hypodermic injection of morphine, one-sixth of a grain. This produced severe vomiting within half an hour, and kept the patient ill throughout the following day, after which she became easy and said the pains were gone. *Viburnum* continued, and patient kept in bed under close observation until March 1st, when another attack of what she persisted in calling "wind colic" set in. She insisted on getting some cathartic medicine or an enema, both of which were denied her, and the attendants forbidden to use either under any circumstances. Gave equal parts of spirits chloroform and tincture cardamom compound, which, contrary to expectation, did seem to give some relief.

The nature of extra-uterine pregnancy was now explained to the husband and a consultation asked for, but was put off, for a time, on the grounds that these attacks were exactly similar to those from which she had suffered for a long time, and were due to "wind in the bowels," rendered worse by the nausea and vomiting due to the condition of pregnancy. At intervals during this time there was some bleeding from uterus.

March 7th patient felt quite well and said she was now

over her trouble, desired to get out of bed; and, in order to afford her some change, she was placed upon a sofa in the room for a short time, and carried back to bed again.

March 8th patient was removed from bed and placed on sofa, in physician's absence, and again returned to bed after a time. On making evening call, found patient about same in appearance as during past week, but was informed that she had "fainted" while being put on sofa, and had severe pain of a sharp, cutting character since; temperature above normal for first time, being now nearly 100° F., and pulse increased from 90 to 112 and small.

On examining by vagina the posterior cul-de-sac was found to bulge forward, presenting the feel of a semi-solid mass elongated transversely and occupying about one-fourth the recto-uterine space, and so tender that patient could not submit to any manipulation beyond the mere touch, and complained a great deal even of that. A consultation was now demanded, and Dr. Tuttle saw the patient on the 9th, pronounced the case one of extra-uterine pregnancy, and proposed laparotomy as offering the safest means of relief, which was accepted by the patient, and on the 12th performed by Dr. Tuttle.

March 17th. Patient's temperature has been normal since operation, excepting on the afternoon and evening of the 13th, when it reached 100° F.

I first saw the patient, in consultation with Dr. Murtland, at her house on Monday, the 9th inst. The pulse was 130, the temperature 99° F. The corroborative signs of pregnancy, as given above by Dr. Murtland, were all present.

An examination under ether revealed a uterus slightly enlarged, moderately anteфлекed, and crowded up toward the abdominal wall and markedly to the left by a boggy mass lying at its right and posteriorly. This mass had fairly definite outlines, did not dip deeply into the pelvis, rose distinctly above the brim on the right side, and was not full and globular, but flattened antero-posteriorly and gave an impression of mobility rather than fixity. There was no annular constriction of the rectum. The mass was boggy to touch and with freely pulsating vessels on its lower surface. The cervix uteri was but slightly softened. The sound was not used, as it was not necessary for any additional information.

I unhesitatingly diagnosed an ectopic pregnancy in the right Fallopian tube, with presumably the escape of some blood into the peritoneal cavity, and advised its removal by laparotomy at the earliest possible date. On the following day Dr. Murtland called and told me that the patient had agreed to an operation, and we decided to perform it on Thursday, the 12th, the earliest date that allowed of the

necessary preparations. On this date, the 12th—last Thursday—I operated at the patient's house, assisted by Dr. Murland, and my own assistant, Dr. H. G. Locke, and Dr. Carlyle who gave the anesthetic.

On reaching the peritoneum it was seen to be of the dark-blue hue which indicates the presence of free blood in the peritoneal cavity; and on cutting through the peritoneum a quantity of free blood, mostly dark, but some bright red, and with many black clots, gushed out. Without stopping to clear this out, I passed in my hand, separated the mass at the right of the uterus from many frail adhesions about it, and drew it into the abdominal wound. It was necessary to ligate off a portion of omentum which was rolled up in a rope-like band and adherent to the mass. On lifting the mass into the wound it was seen to consist of the right ovary and tube, with a mass of broken-down blood clots, and protruding from the end of the unruptured tube was a small fetus with its placenta. I ligated the mass close to the uterus, cleared out the peritoneal cavity of clots and fluid blood by sponging and flushing, inserted a drainage tube, and closed the wound. The tube was removed the next morning, and the subsequent course of the case has been even and uneventful, the pulse falling at once and the temperature remaining nearly normal. The bowels have moved, and the patient is making an easy recovery.

Commenting upon his own case, Dr. Tuttle called attention to the recent observations of Sutton, showing that in a large number of specimens of tubal pregnancy the fimbriated extremity of the tube was not closed before the sixth or eighth week. At that date the peritoneal ring became turgescient and sealed the end of the tube. That author had also shown that tubal abortion was extremely common, and that the death of the ovum did not end the trouble. There was always danger as long as it was possible for the ovum to escape into the abdominal cavity. Dr. Tuttle thought that in these observations one might find an explanation of many cases which heretofore had seemed blind. They also seemed to him to offer another strong point in favor of non-electrical treatment when tubal pregnancy was discovered. If death of the embryo could be accomplished by electricity, there would yet be danger of its escaping into the peritoneal cavity, with enormous hemorrhage. Thus, as our knowledge of these cases broadened, the more unassailable became the position of those who favored primary laparotomy.

DR. H. J. BOLDT said the only remark which he wished to make in connection with the subject of tubal pregnancy, and which had been demonstrated by specimens so often before the Society, was to call attention to the ridiculousness (he had

no better word for it) of using electricity. He believed that the diagnosis of ectopic pregnancy could be made with a good deal of positiveness in the great majority of cases. To state his feelings on the question a little more strongly, it seemed to him that it would be almost criminal for one to use electricity in such cases. He thought that where a diagnosis had been made there was nothing to do but to operate, if the pregnancy had gone beyond the second month.

DR. TUTTLE wished to add, in view of the possibility of the discussion of the subject, that many entertained the feeling of Mr. Tait that hemorrhage into the peritoneal cavity was almost uniformly fatal. Mr. Tait also maintained, he believed, that there was no attempt by peritonitis to shut off the blood when poured out freely into the peritoneal cavity. He wished to call especial attention to the fact that here was a plain history, as plain as could ever be got, of gradual leakage of blood into the peritoneal cavity; that it was afterward shut off by peritonitis. The adhesions shutting off the mass, which were found at the operation, formed gradually, the patient having had slight symptoms, such as she attributed to wind colic.

DR. G. M. EDEBOHLS said it was not at all certain that all cases of ruptured extra-uterine pregnancy in the early months, with free hemorrhage into the peritoneal cavity, terminated fatally. Indeed, some claimed that four out of five of such cases would recover if let alone. It was on these statistics of frequent recovery without operation, after rupture of a tubal pregnancy, that Olshausen had based his line of practice. His experience had been a very large one, and he had announced these conclusions six or eight months ago: If an early tubal pregnancy be discovered before rupture, operate invariably and immediately, and thus avoid the dangers to which the patient will be subjected should rupture take place. If the early tubal pregnancy were not discovered until after rupture, operate only when the symptoms were very threatening, when there were indications of active hemorrhage going on, and when there were, in addition, favorable surroundings for the operation. Otherwise, he said, the patient's chances of a fatal issue would be increased by an operation. Dr. Edebohls believed these views were to a great extent correct.

Of four cases of early tubal pregnancy, all terminating favorably, which had come under his care, he had operated upon but one, in which the following conditions prevailed: He saw the patient on a Saturday evening with the physician in attendance, who had suspected extra-uterine gestation at the eighth or ninth week. On examination he felt a tumor to the right of the uterus, and had no hesitation in pronounc-

ing the case one of tubal pregnancy. The history of the week before had been one of frequent pains and occasional fainting spells. He suspected that hemorrhage had taken place into the peritoneal cavity frequently during the week. To prove this he suggested exploratory puncture. Nothing was obtained from the tubal tumor itself, but on the point of the needle leaving the tube as the syringe was withdrawn, and entering the free peritoneal cavity, the syringe filled at once with blood. Thus he established the diagnosis of free intra-peritoneal hemorrhage, the result of a ruptured tubal pregnancy—a condition which he believed had never before been proved beyond all doubt until after the abdomen had been opened. He suggested to the family physician that, the patient being in good condition, there was no urgent indication for immediate operation; but the latter wanted laparotomy performed in order to put her out of all danger. It was performed two days later. The right tube was found ruptured on its peritoneal surface, the rupture being nearly two inches long. The peritoneum contained about a pint and a half of fluid blood and clots. The tube itself was greatly hypertrophied, and contained a firm coagulum partly extruded through the tear. Dr. Edebohls removed the thrombus from the tube, no active hemorrhage going on at the time, tied off the tube, removed it, cleaned out the peritoneal cavity. The woman made an uninterrupted recovery. But in thinking over the case afterward he had come to the conclusion that the patient would have got well without laparotomy, and with or without electricity. All hemorrhage had ceased; tubal abortion was complete, having taken place, not through the fimbriated extremity of the tube into the peritoneal cavity, but through a rent in the tube, and the blood collected in the peritoneal cavity would probably have become absorbed primarily or after the formation of a hematocele. All cause for hemorrhage having been removed, it was very probable the patient would have recovered without an operation. He thought, therefore, that to lay down the rule hard and fast that laparotomy must be performed in all these cases of extra-uterine gestation, was going to an extreme. He thought the views of Olshausen would gain ground.

DR. A. P. DUDLEY wished to indorse the views expressed by Dr. Edebohls, in some degree. While he did not disagree with Dr. Tuttle, as far as he understood his position, yet it must be remembered that there were some cases in which the surgeon could not do just as he would like. He had had four cases of extra-uterine pregnancy. Of two he was sure of the diagnosis; of the other two, practically sure. The first two he had found free in the peritoneal cavity, the history showing that rupture had taken place about two weeks before,

and the pregnancy of three months' duration. Both patients got well. In both cases, although the blood had been in the abdominal cavity about two weeks, there had been very little effort at encapsulation. It was free blood in the peritoneal cavity, with a few slight adhesive bands about the site of rupture. His experience agreed with Dr. Tuttle's, that adhesions were slow to take place where blood had flowed into the peritoneal cavity.

In the other two cases he had asked a consultation, and his consultants disagreed with him. They were not cases which he could readily take into his own control under the circumstances. Therefore, instead of doing laparotomy he aspirated through Douglas' cul-de-sac. In one case he withdrew sixteen ounces of blood. The patient gave a history of sexual intercourse, of missing a menstrual period, of exquisite tenderness in the side, shock on carrying a bed upstairs—in short, the usual symptoms pointing to extra-uterine pregnancy. After aspirating the blood from the peritoneal cavity, he felt thickening and enlargement, pointing to rupture of the tube and escape of the fetus. In the other case also the consultants disagreed with him, one advising one thing, another something else; consequently he aspirated, pushed the trocar needle through the sac, evidently through the fetus, brought away two ounces of amniotic fluid, pronounced to be such after examination in the laboratory. The patient recovered. Thus the two cases in which he aspirated recovered, and the two in which he operated also recovered. All had been in equal danger of death. Therefore he thought we should choose a middle ground, and suit the operation to the case, and not the case to the operation.

DR. TUTTLE said it appeared that two of the gentlemen had represented him as holding views which he certainly did not. He had seen between twenty and twenty-five cases of extra-uterine pregnancy, the diagnosis of which he felt as certain of as in the case related, yet the majority of the cases he had let alone. He followed this let-alone course whenever there was evidence that the hemorrhage was between the layers of the broad ligament, and thus far these patients had got well. He had strongly favored the position held by Olshausen, that when there was reason to believe no rupture had taken place laparotomy should be performed promptly, in order to guard against dangers which might possibly arise. On the other hand, he would not operate for hemorrhage into the peritoneal cavity, unless he had good reason for believing that it was continuing. He had had positive evidence of this in the case which he had related. If the hemorrhage had limited itself, it certainly seemed wiser to him to let the woman

alone, although on this question there was still room for discussion.

DR. BOLDT wished to make himself understood clearly. As to the advisability of letting the patient alone when hemorrhage had ceased, he said the difficulty was in determining whether hemorrhage had ceased. If the patient rallied and the pulse was good, it might be inferred that there was no present hemorrhage; but he had not seen that class of cases. Moreover, if hemorrhage had stopped, how were we to know how the case would finally come out? With the abdomen opened, the whole field was revealed to the touch or sight, and he felt more like choosing a position which he felt sure of, rather than remain in uncertainty. Allowing for the immediate condition of the patient, he would say that in any case of tubal pregnancy beyond the second month, with or without rupture, he would unhesitatingly perform laparotomy.

FIBROID OF THE UTERUS; VAGINAL HYSTERECTOMY.

DR. H. J. BOLDT presented the specimen.

The patient, a nullipara aged 42 years, suffered intensely from the myo-fibroma in the posterior wall, the symptoms withstanding various forms of treatment intelligently carried out by her family physician. She was seen by Dr. Boldt a few months ago, with a view to removing the tumor by operation, which was, however, refused at the time. She finally demanded relief by operation, which was done five days ago. Owing to the narrowness of the vagina and the presence of the subserous fibromata on the anterior surface of the uterus, the operation was exceedingly difficult, so that Dr. Boldt thought he would have to finish the extirpation by laparotomy, as he had been compelled to do before under similar circumstances.

The patient's condition remained perfectly normal in every respect since the operation.

Dr. Boldt considers vaginal operations decidedly safer for the patient, if they can be done by that method, and had it been possible to enucleate the fibroid in the posterior wall after opening the cul-de-sac, the hysterectomy would have been comparatively simple; but this, as can be seen from the specimen, was impossible. It had been tried.

CASE OF CESAREAN SECTION.

DR. H. C. COE presented (through Dr. Grandin) the patient with her infant. The woman was aged 22, a Russian; Ipara. She was admitted to the New York Maternity Hospital January 6th, 1891, being then at full term. Her height

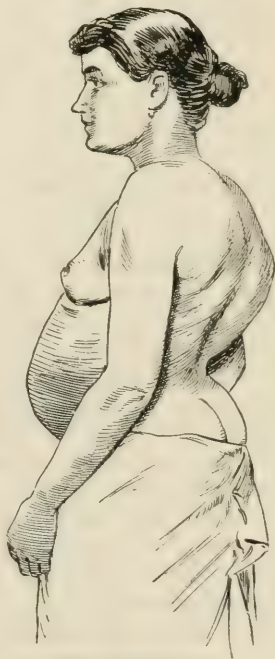
was four feet six inches, and she was rachitic, with marked kyphoscoliosis. Circumference of abdomen at umbilicus, forty inches. The pelvic measurements were: Crests, ten and one-half inches; spines, ten inches; external conjugate, six inches plus; left external oblique, eight and three-eighth inches; right external oblique, seven and one-half inches; conjugata vera estimated at three and one-half inches. Marked contraction of the outlet, owing to the shortening of the right oblique diameter. The patient was examined by the entire visiting staff, who concurred in advising Cesarean section on account of the *relative* indications.

Operation by Dr. Coe, January 12th, at 3 P.M. Child extracted within five minutes after primary incision was made; weighed six pounds and one ounce, and was in good condition. Patient made a rapid recovery, which was not retarded by the fact that the lower angle of the wound burst open on the tenth day (probably due to straining at stool), allowing intestine to protrude and necessitating use of secondary sutures. Patient discharged from the hospital at the end of six weeks.

DR. GRANDIN said that in the three cases of successful Cesarean section to which he had referred, the child in the case operated upon by Dr. Coe weighed six pounds and one ounce; in Dr. Grandin's case it weighed six pounds and a half; in Dr. Murray's, seven pounds and a half; also seven and a half in Dr. Garrigues' case. He said that Dr. Coe, who was absent,

would like to make the point that in all of these cases version might have enabled them to bring forth a living child, but it was a question whether perforation of the after-coming head might not prove necessary. The statistics of Cesarean section were now so favorable that he thought the time had come when we should cease to do embryotomy—an operation which involved as great risk to the mother, and which was repugnant to all right-minded men.

DR. R. A. MURRAY, who had seen this case with Dr. Grandin, had also advised Cesarean section, which was prepared for beforehand, although there might have been a chance to deliver by version, had they wished to risk the necessity for



Dr. Coe's Patient.

embryotomy. Speaking from an experience with four cases—two without previous preparation, two after—he expressed the belief that Cesarean section might yet prove successful in such surroundings as were found at the patient's home, provided one had good assistants.

DR. JACOBI said that fifty years ago it was the opinion in Europe that the child was never to be sacrificed if it was known to be living. It certainly should not now, since Cesarean section had come to be so successful.

HEMORRHAGES IN THE NEWLY-BORN.¹

DR. A. JACOBI read a paper with this title.

DR. J. HENRY FRUITNIGHT said he was glad the subject of cephalhematoma had been discussed, for he thought the views of the Society should be expressed against the custom, prevailing more or less in some parts, of incising the tumor. He could recall two cases which had come under his notice in which incision was practised, and both children succumbed to a fatal hemorrhage. The incision was made on the first or second day after birth in both instances, and the attending physicians were unable to control the resulting hemorrhage. In such cases the friends wished the physician to do something, but he thought our advice should be to let the tumor alone, as Nature would absorb it.

He recalled two cases of umbilical hemorrhage and ecchymotic spots, covering in one case nearly the entire body, and which were doubtless the result of septic infection, the mothers themselves also suffering from puerperal sepsis. They occurred during the pre-antiseptic days.

DR. R. A. MURRAY said that recently a number of cases had come under his observation in which he thought hemorrhage was due to too forcible efforts at delivery—cases in which he thought the child would certainly have been a great deal better off had it been killed outright instead of allowed to live. Only yesterday he had seen a case in which he had himself effected delivery after an extremely difficult labor. The mother absolutely refused permission to do Cesarean section, although he had lost two previous children when attending her in confinement. It was desired that he should save this child, and he did, but now wished he had not. It had a large cephalhematoma before he performed version, for he had not seen the case early. After extraction there was great difficulty in resuscitating the child. It now had an asymmetrical head, bulging eyes, especially the right. The child was easily excited, gave forth piercing shrieks without any apparent reason, and altogether would have been better off dead.

¹ See original article, p. 673.

Only a few days ago he saw a case of tumor in the sternocleido-mastoid, it being the second one of the kind which had come under his observation in a child. He thought it must be very rare in the child. Laceration in older children from play had come under his notice. Again, he had seen a number of cases of hemorrhage which had arisen in children on whom force had been used—on, for instance, the shoulders, in extracting the head. In some the slightest touch of the skin would leave a large bruise even for weeks after birth, and for years afterward slight physical violence would leave large extravasations. He thought that in some such cases there must be a change in the blood vessels. He recalled one case in particular, a boy, now aged 8 years, an albino, extremely light skin and hair, who came into the world after a hard labor. He thought the labor must have done a permanent injury to the child, for he was yet as a boy semi-idiotic, and subject to spasms which Dr. Murray attributed to meningeal hemorrhages. This supposition seemed the more probable as there had been hemorrhages in different joints of the body, attributed by some physicians who had seen the patient to rheumatism.

DR. A. M. JACOBUS referred to the author's remarks upon the subsequent dangers to the child when born asphyxiated, and said the question had often occurred to him how long, in a given case, might the head remain unborn and impacted in the parturient canal without incurring the dangers alluded to. Of course, some children, when labor lasted many hours or days, were born dead, some died soon after birth, while many did not appear to suffer from any immediate or remote bad effects; still others might die or be seriously injured in a labor of but very short duration. It was difficult, then, to judge how long it was safe to wait before assisting Nature by mechanical means. With too great haste to relieve the child from the danger of asphyxia, one might pull its head off, break its neck, or cause serious injury to the brain, the spinal cord, or blood vessels, and thus do more harm than if the moulding process and labor had been permitted to go on longer. Yet if it were left alone too long it might die of asphyxia or suffer subsequently from the results of the asphyxia, as stated by Dr. Jacobi.

DR. C. A. VON RAMDOHR said he had heard with great interest the physiology of hemorrhage in infants; how easily a child might bleed, how often it did bleed; still he thought the paper was theoretical rather than practical in that regard, that it did not give us a remedy against this danger. The consequences which the author had depicted did occur. Yet we could not gauge the amount of pressure which the child would stand, or the amount of injury which it would

withstand without permanent damage. We all had had cases in which the children had to be hurt during birth, yet not all of them had turned out to be idiots. In most of them, happily, extravasated blood became absorbed, and that was the end of it. In practice, injuries to children during birth were common, while idiocy was the exception.

DR. JACOBI thought that Dr. von Ramdohr took things much easier than a great obstetrician and humanitarian ought to do. He understood him to mean that a large number of children who were subjected to pressure with the forceps, and who had cephalhematoma or other injuries, did not die, did not become paralyzed, did not become epileptic nor idiotic. That was true. Yet sometimes, when one looked about, he felt almost convinced that a large majority of adults must have been in those straits. The question was not that so many escaped, but that so many were stricken. Not a month passed but what he saw at least one such case. Probably not a month passed but what he saw two or three cases of children of 2, 4, 7, or even 10 years of age, generally the first in the family, for very good reasons, who were idiotic or epileptic, while there was no family history of the affection. There was a history, in a large number of the cases, of a very severe protracted forceps labor. Therefore he would not admit that his paper was theoretical at all. He did not postulate anything. He had been led to study these matters by the statistics which he had. When, at his clinic, he saw a child of 4, 6, or 8 years of age whom he learned to be idiotic or epileptic from infancy, and found the head well formed, and could but think that the child ought to have a well-formed brain, he most assuredly sought its history. When there was a history of a contracted cranium, a prematurely ossified cranium, the case was clear enough. When there was no such history, and none of meningitis or of encephalitis, then the family record was consulted. In a large number of cases he found that at birth there was asphyxia which had lasted a long time; in a number of cases there were convulsions. Many children who had such a history were found to be epileptic and of limited intellectual development from the beginning. He repeated, therefore, that it was not a theoretical question at all. He did not claim that every forceps operation made an idiot or an epileptic—far from it. But he did claim that the steel forceps in the hands of an inexperienced man would make an idiot, while the same forceps in the hands of a master and a thoughtful physician would save not only the child's body but its soul. It was not the forceps which saved or killed, but the man who used it; as it was not the digitalis, the calomel, or the opium which saved, but the man who administered them and knew how to do so intelligently.

The insane asylums and the large number of idiots in even the best families ought to compel us to look into the history of these cases. He was satisfied that Dr. von Ramdohr would find, when he studied the cases, that many of them were of the origin mentioned. Fortunately, as he had said, not all of those to whom he had applied forceps belonged to that class.

At the Vanderbilt Clinic it was not at all uncommon to see children who were idiotic from birth; others who had paralysis, say of the arm, simply from traction or pressure, without fracture. And that of hematoma of the sterno-cleido-mastoid, which Dr. Murray regarded as so rare, they saw on an average two a year, or, in twenty years, about forty cases. He was positive that he had seen as many as that. And he was further positive that it was the result of twisting of the child's head, very frequently from the force of the obstetrician's finger. Such cases were likely to occur in the practice of those who had not learned that by going slow they were likely to get to the end much more easily and quickly. Now, if these external hemorrhages occurred so frequently, cephal-hematoma, hematoma of the sterno-mastoid, etc., why might not injuries occur within the cranium and produce epilepsy, idiocy, etc.? He was convinced from observation that they did.

DR. VON RAMDOHR was not sure that he had been fully understood. His remarks were directed to those cases of difficult labor in which the forceps had to be applied or the child extracted by the breech in a great hurry, if it was desired to save life, and necessarily some injury might or did take place. Desiring to save the child, we took, for instance, in a flattened pelvis, the chances of injuring the after-coming head. Now, considering the number of such cases, it was a wonder that the number of idiots was not greater.

Stated Meeting, April 7th, 1891.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

RECOVERY OF ALL THE DEEP UTERINE SUTURES SEVEN MONTHS
AFTER CESAREAN SECTION.

DR. EGBERT H. GRANDIN presented eight silkworm-gut sutures which he had removed two weeks previously from a patient on whom he had performed Cesarean section in August, 1890. The section was resorted to under the relative indication, and the patient was out of bed on the twentieth day after operation, nursing her baby. To suture the uterus eight deep silkworm-gut sutures were used, and these

were covered over by a continuous symperitoneal catgut suture. Convalescence was undisturbed up to the seventh day, when a chill and rise of temperature called attention to a small abscess in the abdominal parietes at the level of the umbilicus. This was opened, and a fistulous tract had since existed, extending downward for about two inches. The usual methods for causing the sinus to heal having failed, Dr. Grandin laid it open on March 20th, and at the bottom recovered all the deep uterine sutures. The wound had since completely healed.

The sutures before use had been placed in boiling carbolized water, and yet they had not become encapsulated, but had acted as a foreign body. The specimen was interesting chiefly because he had been unable to find another recorded instance of Cesarean section where the uterus had so effectually rid itself of the deep sutures. The cause of non-encapsulation was doubtless due to the fact that, notwithstanding the precautions taken, one or more of the sutures were not absolutely aseptic.

DR. G. M. EDEBOHLS thought that all suture material of non-absorbable nature, like silkworm gut and silk, even though aseptic when introduced, was liable afterwards to be a source of irritation and to cause trouble until removed. For that reason he never employed such material for sutures when it was to remain, but chose catgut. It was not necessary, according to his views, that the sutures should be septic in order to cause trouble subsequently.

DR. H. C. COE said he would be afraid to use catgut in Cesarean section, lest it should become absorbed before union was perfect. He asked Dr. Grandin whether there might not have been some suppuration, as from a mural abscess, to cause infection of the sutures.

DR. GRANDIN said he had neglected to mention the fact that there was a small mural abscess, which, however, was opened as soon as it was detected, and it was at least two inches above the point at which he ultimately obtained the sutures. While it was barely possible for some of the pus to have reached the sutures, yet it was evident that the wall of the abscess was not in close relation to the sutures. With Dr. Coe he thought it would not be advisable to use catgut in Cesarean section.

ABSCCESS OF THE OVARY; DIFFUSE SUPPURATIVE PERITONITIS;
LAPARATOMY AND DRAINAGE.

DR. H. C. COE showed a specimen with the following history: Mrs. B., æt. 42, was spending last summer at the seashore. She was a patient of Dr. Cleveland, who had curetted her uterus during the previous winter for menor-

rhagia, but had, as I understood, found no serious pelvic trouble. She had enjoyed good health, and, the day before I saw her, was out driving and felt perfectly well.

On the evening of July 15th I was called to see her on account of what appeared to be an ordinary attack of gastro-enteritis, due to her having partaken freely of a rich salad at luncheon. She stated that she was just over her menstrual period, and thought that she may have taken cold the night before by running about in her bare feet, although the weather was excessively warm. When I saw her she was suffering with severe colicky pains in the epigastrium, accompanied by vomiting and diarrhea. Temperature 101° , pulse 120. As she was flowing, I made no vaginal examination, but was unable to detect any localized tenderness upon making deep pressure above the symphysis and in the iliac regions. The pains were confined to the upper portion of the abdomen. The patient was relieved by a hypodermic of Magendie, and the vomiting was temporarily checked. I saw her twice the next day and found her more comfortable, though the nausea and diarrhea persisted. The temperature still ranged from 101° to 102° , and the pulse, although rapid, was full; the patient expressed herself as feeling quite strong, and certainly did not present the appearance of being seriously ill. I was disposed to believe that the elevation of temperature was due to a localized peritonitis, though there was no evidence of it on external palpation. A vaginal examination (rendered difficult by reason of the fact that the patient was very stout) was negative; no induration, prolapsed ovary, or local tenderness could be found. The uterus was large, but not sensitive to bimanual pressure. There was a slight flow, without odor.

On the evening of the third day the patient's temperature reached 103° . She did not complain of much pain, but her abdomen was somewhat tympanitic. She was able to take nourishment and stimulants, and had only two or three loose movements.

On the morning of the fourth day there was a decided change for the worse. Temperature 102.5° , pulse 120 to 130 and not so strong as before. Tympanites more marked, but not excessive. General tenderness over abdomen, but not marked in any particular region. The patient had the peculiar facies so characteristic of general septic peritonitis. I asked Dr. A. H. Smith to see her with me, and he agreed with the diagnosis and serious prognosis. I suggested abdominal section as offering a slight chance, and it was at once accepted by the family. Operation at 1 P.M. on July 18th, 1890, about seventy-two hours after the development of the initial symptoms. Several ounces of purulent fluid were

evacuated, and the intestines were already matted together by organized lymph. In the right iliac region, among some adherent coils of gut, I found a mass adherent to the caput coli, which I naturally supposed was the suppurating appendix. On attempting to separate it from the gut, pus escaped from it, and I found that the abscess had already perforated into the gut. The sac was removed, the intestinal perforation sutured, and the general cavity thoroughly irrigated and drained. The uterus was large, the right tube adherent but not enlarged, the left tube and ovary apparently healthy.

The patient did not rally from the operation, although it was short. Contrary to the usual course in such cases, the temperature rose steadily, reaching 108° (axillary) just before death, which occurred five hours later. The specimen removed proved to be an abscess of the ovary, containing half a drachm of fetid pus. The ovary was only partly disorganized, as shown by the presence of several ovisacs; that the abscess was not of recent origin was evident from the thick wall of the sac and the well-marked pyogenic layer. The case presents several features of interest, the principal being the sudden development of symptoms—which, however, did not furnish the slightest clue to the existing pathological condition—the rapidly fatal course, and the peculiar appearance of the ovary when seen *in situ*, closely simulating perforative appendicitis.

In view of the fact that our attention has of late been directed to the subject of ovarian abscess, I may be pardoned a few words in regard to the etiology and diagnosis of this condition, which is not so rare as has been represented. Although the symptoms in this case, and in another similar one (occurring in my private practice two months ago), were so acute, the pathological condition was clearly one of long standing. We do not distinguish carefully between acute suppurative oöphoritis and ovarian abscess. The former I have in several instances found in cases of acute diffuse peritonitis accompanying the septic endometritis which follows operations upon the uterus. The ovary, previously normal, shows on section streaks and foci of pus, but no distinct collection within a well-marked sac. The latter is an ovarian abscess proper, and is a subacute or chronic condition, the same as pyo-salpinx. And just as a simple hydro-salpinx may, through infection of its contents, become a pyo-salpinx, so a cystic ovary may become an ovarian abscess. In fact, my observations have led me to believe that most ovarian abscesses are secondary to simple follicular cysts. This is shown, as in the present specimen, by the fact that only a small portion of the ovary may suppurate, the remainder of the gland being comparatively healthy. How does this infection and trans-

formation of an innocent cyst fluid into the notoriously septic pus of an ovarian abscess occur? Possibly by infection through the tube, but more commonly by extension from the uterine cavity along the lymphatics, there being a direct communication. Certain it is that the pus from an abscess of the ovary may be extremely acrid, containing numerous pyogenic bacteria, when the corresponding tube is either the seat of simple catarrhal salpingitis or contains bland pus. I would call attention to another explanation of the dangerous quality of the contents of ovarian abscesses—their close proximity to the bowel. It is almost the rule for suppurating ovaries to be adherent, and firmly adherent, to the gut, and by no means rare for them to discharge their contents into the gut; this occurs more frequently than in the case of the adherent tube. In two of my cases in which laparotomy was performed the attack began with diarrhea. Was the diarrhea of a septic nature, secondary to perforation of the abscess into the bowel, or did the colitis lead to a lighting up of fresh inflammation in the adjacent suppurating ovary? This is a nice point, which it is impossible to decide. It is safe to assume, however, that the urgent symptoms which are always present in these cases do not represent the development of acute suppuration in the ovary so much as they do an exacerbation of previous trouble with accompanying peritonitis.

A word as to symptomatology. There is no characteristic symptom. Abscesses of the ovary are usually found where the operation was performed for some other condition—pyosalpinx or appendicitis. Richelot, in discussing the symptomatology of the latter condition, states that pain and induration in the right iliac fossa point to the existence of appendicitis in the female, even though an induration to the right of the uterus is felt per vaginam, and that early surgical interference is indicated. But after weeks of observation I found precisely such a mass in the iliac fossa to be, not a suppurating appendix, but an ovarian abscess adherent to the caput coli.

The prognosis of cases such as the one reported is necessarily grave. An ovarian abscess is always a source of danger, since rupture, either before or during operation, is commonly followed by a rapidly fatal septic peritonitis. I can only explain the virulent character of the process in the case reported by the fact that some of the pus from the abscess had come in contact with the peritoneum. Abdominal section was certainly not long delayed, but, nevertheless, it was performed at least twenty-four hours too late.

DR. CLEVELAND said that this case had been referred to him by Dr. Burrall because of marked menorrhagia. Though

the patient was stout, she was puffy and anemic. Her uterus was very large, but he found no tumor on either side; the appendages seemed to be normal. He curetted, removing a large quantity of fungosities, first about two years ago, relieving the menorrhagia for a time, and again six months later because of a return of excessive menstruation. She was in good health when she went to Long Branch last summer, so that the trouble which Dr. Coe found must have developed recently.

DR. RALPH WALDO raised the question whether washing out the abdominal cavity, as Dr. Coe had described, really lessened the liability to a fatal termination. He knew that simply to irrigate the hands by allowing water to run over them would not by any means render them aseptic, and he did not believe that it would render the abdominal contents aseptic after they had been exposed to septic matter.

DR. COE said, in reply to Dr. Waldo, that Dr. Parrish had reported a number of cases of acute septic puerperal peritonitis in which a cure was effected by thorough irrigation and drainage.

DR. FLORIAN KRUG thought that the cure in the cases of Dr. Parrish was effected by the drainage rather than by the irrigation. He thought that to rely upon washing out the abdominal cavity was a great mistake. He had used water in this way, but for the purpose of stimulation, having given up the idea of thus sterilizing the cavity. No matter how many gallons of water were used, he did not think it would render the cavity aseptic. Where cure was effected in septic cases, in cases in which pyogenic pus or bacteria were present, it was by drainage.

DR. CLEMENT CLEVELAND presented a specimen of

RUPTURE OF INTESTINE DURING LAPARATOMY.

Miss G. entered his service at the Woman's Hospital February 23d, 1891, giving the following history: She was 22 years of age, single, an actress by profession. Her menstrual life began at 14, and has always been irregular. She was in fairly good health till five weeks before entering the hospital, never having been confined to her bed or forced to give up work from illness. At this time she began to have pain in the abdomen, chiefly in the left side, with marked tenderness, and pains shooting down the left leg. Bimanual examination revealed the uterus anteflexed, slightly movable, with a mass on each side, the one on the left giving slight indications of fluctuation.

Diagnosis of ovarian or intraligamentous cyst, with possibly pyo-salpinx of both sides, was made, and laparotomy advised and decided upon after concurrence of Dr. Nicoll.

On March 9th, in the presence of the house staff and visitors, the operation was performed.

A short incision was first made and afterwards enlarged to four inches. On the left an intraligamentous cyst and pyosalpinx, with sigmoid flexure firmly attached, was made out. On the right the adnexa were firmly embedded in a dense mass of adhesions.

At first it seemed impossible to do anything in the way of removal of any of the diseased structures, and I was about to abandon the attempt, when I felt encouraged to go on by the success I met with in enucleating the cyst. Having gone thus far, I felt it necessary to proceed. The cyst was fully three-fourths enucleated when it ruptured. I removed what I could of it, leaving a small portion of the cyst wall.

In separating the intestine from the tube, it was torn across in the shape of a right angle, with sides an inch in length. The serous covering was also stripped up for five inches, leaving merely the muscular and mucous layers.

As the portion of the intestine where the tear occurred was not in a healthy condition, I decided it unwise to sew up the rent, as the sutures would probably slough out. Moreover, as the peritoneal covering of the gut had been torn away for five inches, I deemed it also unwise, for fear of volvulus, to leave such a large amount of weakened intestine. I therefore resected five inches and did circular enterorrhaphy with iron-dyed silk. The tube was then tied with No. 7 catgut and cut away.

The right tube and ovary, though diseased, were left, as I felt there was too great risk in prolonging the operation, and it was apparent that much difficulty would be met in removing them.

The cavity was then packed with gauze about a drainage tube, great care being taken to pass enough of it under the intestine to act as a shelf for it to rest upon, at the points where the ends were sewed together.

The abdominal incision was then closed with silkworm gut, the dressing applied, and the patient put to bed. The gauze was left for twenty-four hours, and then easily removed.

For forty-eight hours there was a good deal of reactionary temperature, if I may use the term, the highest, on second day, being 104.5° . Peristalsis was prevented by morphia for eight days. Then light laxatives were administered and the bowels moved freely. Since which time there has been a daily evacuation and the history has been uneventful. There is still a small sinus, which is rapidly closing. The patient pronounces herself perfectly well.

Dr. Cleveland here presented the specimen, which was preserved in equal parts of alcohol and water, with a glass tube

running through it, showing the tear. The specimen looked almost too small for a portion of the sigmoid flexure, but a section had been examined by Dr. Freeborn under the microscope, and pronounced by him to be a portion of large intestine.

DR. KRUG thought that Dr. Cleveland could not have applied Trendelenburg's posture in the most approved way, else the parts would have been thoroughly exposed and the accident to the intestine might have been avoided. He had never yet found a case in which the intestines did not fall back when the patient was placed properly.

DR. CLEVELAND said he had used Trendelenburg's posture in other cases, and thought highly of it; but here was an exception, which was to be accounted for by the smallness of the abdominal cavity and the intestinal adhesion.

A CASE OF DOUBLE CEPHALHEMATOMA, WITH IMPERFECT
OSSIFICATION OF THE CRANIAL BONES.

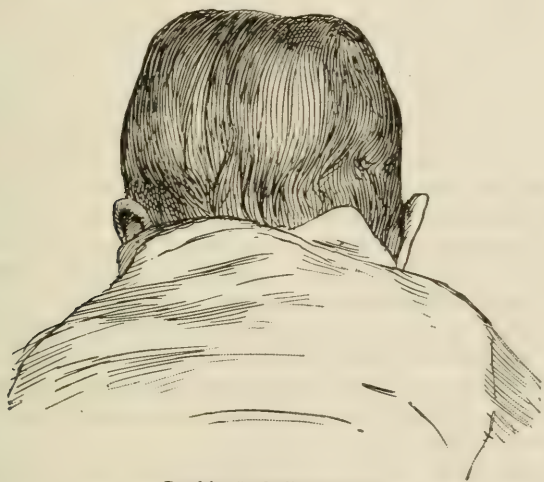
DR. COE exhibited a child with double cephalhematoma and introduced Dr. H. R. Heydecker, who read the following report of the case: Through the kindness of Dr. Coe, I am permitted to show you a case of double cephalhematoma, which I recently had under my care at the New York Maternity Hospital during his service.

The mother, a primipara, 26 years of age, single and born in the United States, entered the waiting wards on February 24th, 1891. She was well nourished, in good physical condition, and gave a favorable family and personal history.

On March 20th, being called at 9 P.M., I found the patient having good labor pains, the os uteri less than a quarter dilated, and the head engaged, with the occiput in the left anterior position. The position was made out without difficulty, and nothing abnormal was noted about the head. At 11:35 P.M. a second examination was made. The os was then about three-fourths dilated, and the head had descended well into the hollow of the sacrum. At this examination I was surprised at the condition of the fetal head. The bones were as soft as parchment, being easily indented by the examining finger. The sutures seemed to be running in all directions, and it was impossible to locate the fontanels. The sensation experienced on palpating the head so closely resembled that produced by a macerated fetus, that I again sought the fetal heart to assure myself that the child was still living. Finding that the heart had decreased in rapidity from 136 to 108 beats to the minute, and that the mother was becoming weak and the pains inefficient, I waited only until the os was fully dilated (12:30 A.M., March 21st), when I delivered easily

with low forceps. The fetal pulse at the time of delivery was 100.

The child, a boy weighing seven pounds one and one-half ounces, was slightly asphyxiated. It was resuscitated without difficulty. On examining the child it was found that ossification in the cranial bones was very deficient. The anterior fontanel was extremely large, the sagittal suture very broad, and around the region of the posterior fontanel were a number of loose Wormian bones. The parietal, occipital, and frontal bones were very soft and easily bent and indented. The head was interesting, and, I am sorry to say, was much palpated by myself and assistants before the child was transferred to the ward.



Double Cephalhematoma.

On the morning of the second day after delivery my attention was called to two prominent lumps upon the child's head, which were situated one over the central portion of each parietal bone. The character and location of these tumors will be seen better than they can be described. I regret that these prominences, which have been pronounced by Dr. Coe and others to be cephalhematoma, are subsiding very rapidly, although it is only the eighteenth day since the birth of the child, and the fifteenth since their appearance. On the second day marked signs of icterus neonatorum were seen, the child remaining somewhat jaundiced for eight days.

This case would seem to throw some light upon the uncertain etiology of thrombus neonatorum. From the ease and rapidity of the labor it is unlikely that these blood tumors were due to prolonged pressure during the passage of the head through the parturient canal. The presence of a tumor

on both sides of the head excludes as a causative factor the constriction of a rigid os upon the presenting part.

We have, on the other hand, two factors which together give a sufficient cause for the lesion, viz.:

First. The immature ossification of the cranial bones, and consequent incomplete protection of the vessels in the cancellous tissue.

Second. Undue violence to the head, both before and after delivery, which would cause excessive motion of the soft bones, with resulting damage to the enclosed vessels and effusion under the pericranium.

It is universally admitted that none of the theories advanced, regarding the etiology of this lesion, explain why the vessels running between the bone and the pericranium should rupture and thus give rise to these blood tumors in one case, and not in another where apparently the same conditions, with regard to length and character of the labor, exist.

I am well aware that conclusions based upon the observation of a single case are of little value, and only suggest as a possibility that the unprotected condition of the vessels in poorly ossified cranial bones may account for the occurrence of cephalhematoma, especially in easy labors, where it would least be expected if any form of trauma, uncomplicated by a pathological condition of the bones, is to be regarded as the cause. I can find in the literature of this subject no mention of a relation between cephalhematoma and faulty development of the cranial bones. Yet the lesion is far more common in foundling asylums and among the poorer classes, just where we would expect faulty ossification from malnutrition of the fetus.

Dr. Howard A. Kelly, in his paper on cephalhematoma, quotes Doepp, who says that "in an extensive private practice in the course of twenty-six years, I observed only three cases of cephalhematoma, while, on the other hand, in St. Petersburg Foundling Asylum, in a period of eleven years, I had occasion to treat two hundred and sixty-two cases among fifty thousand children, or one case in one hundred and ninety children."

It would be of interest in the future to observe in what proportion of the cases of cephalhematoma there is associated imperfect ossification of the cranial bones.

TWO CASES OF CARCINOMA UTERI.

DR. FLORIAN KRUG said: The first two of the specimens which I present to-night are two uteri removed by vaginal hysterectomy during the last two months, both showing carcinoma of the body.

The first patient, Mrs. T., æt. 39, called at my office in January, stating that she had been in ill-health for the last three months. She had been married seventeen years, had borne two children, and gave a normal menstrual history until a short time ago, when her menses became more profuse and of longer duration. She also noticed a slightly offensive discharge during the intervals, sometimes tinged with blood. She had lost almost twenty pounds in weight. Examination showed the uterus very much enlarged, its mobility lessened; the cavity measured four and one-half inches; free bleeding following the careful introduction of the sound. Examination under ether showed that the partial fixation of the uterus was due to old inflammatory trouble and would not interfere with the extirpation of the organ through the vagina. The cavity was curetted and a piece cut out of the cervix longitudinally. Microscopical examination by a pathologist revealed carcinoma of the mucous membrane of the corpus uteri, which had also spread to the mucous lining of the cervix. On January 30th vaginal hysterectomy was performed; duration of operation, twenty-five minutes; silk ligatures used exclusively, which were left long, as is always my custom, in order to secure drainage from the stumps; vagina was packed with iodoform gauze. The bowels were moved on the second day. The dressing was changed a week later for the first time, and the peritoneal cavity was found closed with healthy granulations. The second change of dressing was made two weeks after the operation, when the ligatures came away by a gentle pull. Patient discharged one week later. Highest rectal temperature after the operation, 100.2° F.

The second case, Mrs. Q., æt. 45, five children, was sent to me by her family physician, who had treated her for some time past for profuse metrorrhagia which could not be controlled by ordinary means. He had curetted her twice, and made the diagnosis of carcinoma of the endometrium after the second curetting. His diagnosis was verified by the pathologist, who examined the scrapings removed by me for a third time. On March 17th I extirpated the uterus per vaginam, the operation occupying not quite twenty minutes. The after-treatment, also the result, was the same as in the other case, the temperature reaching 100.6° once, to remain absolutely normal during the entire convalescence. This being my fifteenth case of vaginal hysterectomy, and having lost only case No. 4, the mortality in my operation is 6.6 per cent.

As the disease is limited to the uterus in both cases, I consider them most favorable as regards recurrence. I must congratulate the family physician on his early recognition of the malignant disease in the second case, it being

my experience that the general practitioner as a rule will not bring those cases to the surgeon for radical treatment at such an early stage. However, it is to be hoped that, within a time not too far distant, early cases of cancer of the womb treated by vaginal hysterectomy will become the rule instead of being the exception.

TWO CASES OF UTERINE FIBROIDS REMOVED BY TOTAL EXTIRPATION.

In presenting the next two specimens, I wish to say a few words in reference to disposing of the stump after hysterectomy for fibroids. For years past this has been an object of frequent discussion among abdominal surgeons, their opinions being about equally divided in regard to the extra- and intraperitoneal methods. Both have their advantages, but also their great disadvantages. I feel confident that the controversy will be settled in the near future, and that the method of not leaving a stump at all will be adopted by the adherents of either one—in fact, become *the ideal method*. It will be readily admitted that the actual dangers after supravaginal amputation for fibroids almost invariably come from the stump; hemorrhage being the more prevalent with the intra-, sepsis more with the extraperitoneal method. These two paramount factors, sepsis and hemorrhage, which cause the high death rate, can be guarded against to a far greater extent in the new procedure. No hemorrhage or sepsis can come from the stump after it is taken out, and the perfect drainage which is obtained at the same time renders the total amount of danger still less. As for the duration of the operation, there is no doubt but what it takes less time to remove the cervix with the uterus than to properly treat it either after the intra- or extraperitoneal method. The after-treatment is equally simple.

To my knowledge Prof. Martin,¹ of Berlin, is to be credited with having first advocated the removal of the entire organ instead of leaving a stump. Of late Chrobak, in the *Centralblatt für Gynäkologie*, has written a strong article in favor of this procedure.

My first operation after this method was done on May 13th, 1890; the case and specimens were presented to this Society, and ever since I have been an ardent promulgator of this *modus operandi*. I have been asked whether the method was applicable in all cases, even in those where the fibroid was firmly held in the true pelvis, it having unfolded the two sheets of the broad ligament. I now feel justified in answering emphatically, yes. Having succeeded in my last case,

¹ A claim for priority has since been made in favor of Dr. Bardenheuer.

which tested the feasibility of the method to its utmost, I do not believe that there is a case of fibroid where, with the help of Trendelenburg's posture, the technique could not be carried out.

Let me now give a brief history of the two cases.

Miss N., æt. 39, normal menstrual history until about three years ago; since then profuse menorrhagia, usually lasting ten days, greatly weakening the patient. Abdominal swelling noticed for about two years. She consulted my friend Dr. R. A. Murray, who made the diagnosis of fibromyoma, and treated her with the galvanic current for some time. Seeing that the patient did not gain at all, he kindly referred her to me for the operation. I found a pale, anemic patient, with a rather weak action of the heart. The tumor reached to the umbilicus and was almost round in shape.

The operation was performed on March 6th, with the patient in Trendelenburg's posture. Three silk ligatures on each side were sufficient to secure the ligaments. Then an incision was made in the vagina posteriorly and carried around the cervix, thus removing the entire uterus with its adnexa. The ends of the ligatures, which had been left long, were then carried out through the vaginal opening, and the latter packed with iodoform gauze, imitating the dressing as in vaginal hysterectomy. The entire operation did not last quite thirty minutes. Still, through an unfortunate occurrence the patient died on the ninth day after the operation, mainly on account of fatty degeneration of the heart muscle. This, however, cannot be used as an argument against the method; on the contrary, the autopsy showed the peritoneal cavity to be in a normal condition, the vaginal opening already closed by healthy granulations.

Mrs. M., æt. 43, four children, the last one eight years ago. Had been in fairly good health until four years ago, when she commenced to experience severe pains before and during her menstrual periods. Of late the pains have become excruciating, and are almost constant, so as to prevent her from doing light housework. Painful micturition and defecation made life a burden to her. She was admitted to the German Hospital, and on examination a fibrous tumor, springing directly from the cervix and filling the entire true pelvis and the lower part of the abdominal cavity, was made out. The tumor was absolutely immovable. The patient, having been made acquainted with her condition and the chances she was going to take, insisted upon having a radical operation performed. Before the operation I remarked to the gentlemen present that I considered this a severe test for the method, and if I succeeded in carrying it out in this case I

would feel sure that it could be done in every other instance. Operation was performed on March 13th; Trendelenburg's posture. First part of operation the same as in previous case; the latter part, shelling the tumor out of the broad ligament, was extremely difficult. Still I was able to tie the uterine arteries and reach the vaginal junction without any serious hemorrhage, and after opening the vagina posteriorly I finished the operation in the same manner as before. Duration of operation, one hour and twenty minutes. Patient made uninterrupted recovery. The highest temperature reached was 100.8° in the rectum; bowels moved on third day. First change of vaginal dressing eight days after operation; second change two weeks after operation, when the ligatures came off. Patient is now out of bed, and will leave the hospital this week.

Reiterating my statement, I feel confident that within a short time the total extirpation of the uterus in fibroids will be generally adopted as *the* method in all cases where enucleation or vaginal hysterectomy is not feasible. I also expect to see the mortality narrowed down to from three to five per cent. Then we shall probably give up the fallacious idea of spiriting away large-sized fibro-myomata by electricity.

DR. COE wished to make an acknowledgment. After watching Dr. Krug perform total extirpation of the uterus for cancer, he had come to the conclusion that the bad results which he (Dr. Coe) had reported a year ago were due partly to a faulty technique and partly to the selection of improper cases. He now believed that forcipressure was not the most surgical way of securing the broad ligaments in cases in which it was possible to apply ligatures. Once in a while there might be a case in which the use of clamps might seem necessary; for instance, he had reported two cases of hysterectomy in which the vagina and introitus were extremely narrow, and it would have been almost impossible to apply ligatures. But he thought with Dr. Krug that, as a rule, to seize a quantity of tissue with forceps *en masse*, and to let it slough off, was not in accord with modern surgical teaching, and he believed that the cases of fatal intestinal obstruction which he had reported were due to that mode of treatment. When the clamps were removed, the upper portions of the broad ligaments tended to retract; the raw surfaces were then brought in contact with the intestine, and contracted adhesions to it.

DR. W. M. POLK said it was a gratification to him to know that Dr. Krug indorsed and Dr. Coe had come to look upon the use of clamps as unsurgical and only to be resorted to where the ligature could not be applied. It was a second

resort always. He felt sure that Dr. Coe's remarks with regard to the chances of intestinal adhesions and obstruction taking place, were in the right direction; that these accidents were more likely to arise with the use of clamps than without. Moreover, the use of clamps did not shorten the operation in many cases, for the reason that accidents were likely to occur which required time for their correction. For instance, they might slip and cause bleeding which the operator could not check because of the difficulty of working in the vagina full of forceps.

DR. J. R. GOFFE remarked that, although Dr. Krug had said that he left no pedicle after removing the uterus with the fibroid tumor, the raw surface of the broad ligament really composed the pedicle. He was inclined to agree with him that it was quite feasible to remove the entire uterus, including the cervix. He had already reported four cases in which he had left the cervix, the method being what he had called the extraperitoneal but intra-abdominal, leaving the cervix as a stump. Since that time the operation had been performed twice, making in all six cases. The last one he had performed on Saturday morning last, and the case promised to make a perfect recovery. But he was convinced at this last operation that it would have been a very simple thing to have gone down and removed the cervix and put the broad ligament into the vagina. He saw no objection to treating it in that way—turning the pedicle down into the vagina, dissecting a flap off of the tumor anteriorly and posteriorly, and stitching them together. He objected to leaving raw surfaces in the abdominal cavity. In a case in which he removed the cancerous uterus through the abdominal walls, in January of this year, he left the ligatures long, drew them down through the vagina, and then stitched together the flap in Douglas' cul-de-sac and that of the bladder, so as to shut out all the raw surfaces from the abdominal cavity. He saw no reason why that procedure should not be carried out in removal of fibroid tumors.

DR. A. P. DUDLEY thought that in treating the pedicle of a fibroma in this manner there would be danger of making a curve in the ureters, and also of causing pressure upon them by bringing the surfaces of the wound together in the manner mentioned. All knew that the ureters were occasionally injured during the removal of fibroids. For his own part, he saw no occasion for removing the cervix in cases of fibromata. The tumor did not implicate the cervix itself. The cervix did not cause irritation after the wound healed, whereas it did maintain the vault of the vagina in proper shape, and avoided the necessity for leaving scar tissue here.

THE PRESIDENT thought the operation which Dr. Krug had attributed to Martin was really an adaptation of Freund's method for the removal of carcinomatous uteri.

DR. KRUG said that he had given Martin credit for applying that principle to cases of fibroids. He also said that Dr. Polk had misunderstood him, if he thought that he had returned from the clamp to the ligature, for, as a matter of fact, he had used clamps in only one of fifteen cases, and that patient had died. He said further that the intestines were separated from the raw surfaces by iodoform gauze, thus avoiding adhesions and obstruction, and that drainage was secured through the vagina—a fact to which he attached much importance. When union had taken place, a cicatricial plug remained between the vagina and abdominal contents.

DR. GOFFE thought the view that a cicatricial plug was of value as a support, at least as a permanent support, had been abandoned. He thought it was much better to stitch the surfaces together at the vault of the vagina, and so get primary union.

DR. EDEBOHLS presented three specimens. The first was

I. AN INTRALIGAMENTARY PAROVARIAN CYSTOMA,

diagnosticated as such before operation, from the situation of the tumor and the character of the fluid obtained by exploratory puncture. The tumor, ten centimetres in diameter, occupied the left broad ligament of a young married woman, from which it was shelled out, delivered unbroken through a small abdominal incision, and tied off with the normal tube and ovary of the same side. The oozing from the capsule of the tumor was controlled by packing with iodoform gauze, no ligature whatever being required. The patient recovered without an untoward symptom.

II. AN INTRALIGAMENTARY PAROVARIAN CYSTOMA REMOVED
WITHOUT DISTURBING TUBE OR OVARY.

The tumor measured fifteen centimetres in diameter and was removed by laparotomy from a married woman of 30, who had been entirely unaware of its existence, having come to Dr. Edebohls for the repair of a perineum lacerated through the sphincter. In this case also the nature of the tumor was diagnosticated from its situation and the character of the fluid obtained on exploratory puncture. The case came under his care a week or so after the case already cited, and the doctor resolved, if he found the tube and ovary of the same side normal, to attempt the enucleation and removal of the tumor without interfering with the appendages. He was

led to this course by a study of the specimen first presented, which demonstrated that the tumor could have been removed without sacrificing the tube and ovary of the same side. Accordingly in this case the broad ligament was incised at a distance from the appendages, and the tumor shelled out and removed without disturbing tube and ovary. A moderate hemorrhage from the side of the uterus where the tumor had been attached was controlled by a running catgut suture. The patient made an uneventful recovery, and the operation seemed to have exerted a favorable influence upon the epilepsy from which she was a sufferer, the attacks having since been fewer and less severe. The lacerated perineum has also since been repaired.

III. ADENO-CARCINOMA OF THE RECTUM AND VAGINA REMOVED BY A KRASKE OPERATION

performed four weeks previously. The patient, a married woman of 46, came to him with a history of rectal pains and hemorrhages covering a period of eight months. On examination a malignant ulcerated growth was found in the rectum, beginning two and one-half centimetres above the sphincter, reaching to eight centimetres from the anus, and embracing the entire circumference of the bowel. It involved the posterior vaginal wall, which it had perforated six centimetres above the posterior commissure, leaving an opening large enough to admit the finger. A piece of the growth was excised and pronounced by Dr. Hodenpyl to be "a tubular adenoma of that variety which runs a malignant clinical course." After removal of the coccyx and resection of the sacrum on the left side up to the third sacral foramen, Douglas' sac was opened, and the rectum divided twelve and one-half centimetres above the anus and fully four centimetres above the upper limit of the disease, after previous clamping above and below the site of division. The healthy gut was liberated and drawn down as far as possible, and the peritoneal cavity closed by suturing the peritoneum covering the posterior surface of the uterus to the front of the drawn-down sigmoid flexure. After thus securing the peritoneum from contamination and infection, the diseased portion of the bowel and the posterior vaginal wall were removed from above downward. The sphincter ani was allowed to remain, but unfortunately could not be utilized, as it was found quite impossible to draw down the healthy gut thus far. After removing a large extension of the growth into the right ischio-rectal fossa, a sacral anus was formed by stitching the severed gut into the incision about six centimetres above the site of the sphincter. The hemorrhage during the operation

was moderate, owing to the position of the patient, the sacral region being elevated, with body and lower extremities pendent. The operation lasted fully two hours, and the patient was put to bed in a very precarious condition. In spite of this and a very free secondary hemorrhage, she rallied and did well until the seventh day, when a chill followed by rise of temperature ushered in a septic condition, to which the patient succumbed on the tenth day after operation. The cause of death was found on autopsy to be due to a necrosis of the intestine five centimetres above the artificial anus, leading to general septic infection. Dr. Edebohls was inclined to attribute the necrosis of the gut to the combined effects of undue tension when attaching it to the skin, and of the loss of nutrition concomitant upon the severe secondary hemorrhage. He would, in a similar case where the gut could not be made to reach to the skin comfortably and without tension, close the open end of the gut by suture and establish an artificial anus by performing inguinal or lumbar colotomy, preferably the former. This course would have the additional advantage of facilitating the maintenance of the large wound in an aseptic condition.

DR. J. R. GOFFE then read the paper of the evening,

TO WHAT EXTENT CAN UTERINE DISEASE BE PREVENTED,
AND HOW? ¹

DR. COE said there was a delicate subject on which he had hoped that the author would touch, namely, excess in matrimonial relations. He thought that this was a common source of uterine trouble. One could hardly visit a clinic and not find one or more cases in which this had not been the initial cause of uterine disease or a potent factor in aggravating existing trouble. For example, a young, strong, healthy Irish girl, who has scarcely known pain either at the menstrual period or at any other time, is able to do a man's work, marries, and within two months comes to a clinic, complaining of constant bearing-down pain, ovarian pain, dysmenorrhea, and a train of symptoms which she had never had before. A little investigation shows that it is due to marital excess. Dr. Coe believed that the higher classes were no better in this respect. This was a field for preventive medicine. Gynecologists could do more good by some judicious advice in such cases than by attempts to treat a prolapsed ovary or a subacute parametritis after it had once resulted from such causes.

DR. POLK said that the portion of the paper which appealed most strongly to him was that relating to the parturient state.

¹ See original article, page 666.

He was in full accord with the view that in this direction we must look for a great deal of the trouble found in married women. He thought it was important, in the first place, that we treat parturient women more naturally than had been done heretofore. Instead of insisting upon her remaining quiescent after parturition, as had been the habit of most of us, for seven or ten days, or, according to the practice of one of our most distinguished obstetricians, for fourteen days, she should approach the custom of working women. Lying-in women should be taught that as soon as they have the strength to sit up it is entirely proper for them to relieve themselves instead of using a bed pan. The habit of keeping women on their backs through fear of dislodging some thrombus which might cause sudden death, had no good basis. They were no more likely to have such troubles sitting up than lying on the back; less likely, indeed.

He also thought that patients should be taught that it was a matter of first importance to have the uterus examined after labor. Not immediately after delivery, nor necessarily the second, third, or fifth day, but as soon, at least, as any symptoms arose which caused us to suspect that things were not going on as they should. Many cases of mild or severe sepsis which were called puerperal fever could be prevented by moving upon them promptly. He believed it was now pretty well agreed that puerperal fever was a more or less marked form of sepsis, and in his opinion treatment of it should be the same as that pursued in sepsis existing in any other portion of the body. Mild sepsis after delivery not infrequently meant salpingitis, if not more. It was not necessary to pursue this thought further, as its mere suggestion on this occasion was sufficient. As soon as there was a temperature, or symptoms which had generally been attributed to puerperal fever, it was our duty to at once attack the interior of the uterus. Curette, wash out, drain. He was convinced that by pursuing this course we would avoid many subsequent ailments, such as salpingitis, etc.

DR. RALPH WALDO took a somewhat different view from the author with regard to the influence of education in the production of uterine diseases. He had once seen a great many dispensary patients who had come almost exclusively from the peasant classes of Europe, and among them, although their education was almost nothing, there were many extensive lacerations of the cervix and other uterine troubles. He, therefore, thought we would have to look for some other cause than education. He had been glad to hear Dr. Polk's remarks, for he had once seen a great many cases of puerperal sepsis, and had found that often they could be cured at once simply by treating the interior of the uterus. Do not

wait for serious trouble to develop before treating the uterus.

DR. GEORGE T. HARRISON had listened with a great deal of interest to the paper, which, he said, presented a great many suggestive points which might be expanded into volumes. But he was afraid a great many of his explanations were, like many others which had been offered, objectionable because they simplified things too much. When we had a very intricate problem and found a very simple way of solving it, we had better pause and see whether we had fairly grappled with it or not. For instance, the explanation offered for lacerations of the cervix—he thought it was a mere hypothesis, not a demonstration. He would like to see an array of facts to prove it. It was possible that a partially developed uterus was more liable to laceration, but any one of experience knew that many of the worst cases were not of that type. Undeveloped uteri were more likely to be sterile.

With most of the points bearing on the education of the female he was prepared to agree heartily. But there was one inference from the author's remarks which he could not accept, namely, that it was important, in the management of the puerperal condition, always to examine the cervix. He understood the author to mean that it was the physician's duty in every instance, immediately after labor, to make an examination. The speaker deprecated any such procedure. He believed that the less the woman was examined the better it would be for her. It had been proven beyond peradventure in large hospitals, as in Leipzig, that the women who were let alone did not develop sepsis, while those who did have sepsis were among the ones who had been examined. He never thought himself of examining a woman after labor, unless it had been a difficult or a complicated one. Perhaps that course, if pursued by Dr. Goffe, would not breed sepsis, as he was able to carry out scrupulous cleanliness; but it must be remembered that if it were taught as a doctrine it would have to go forth for the world to practise. If the custom of examining the woman after labor became universal, he did not doubt but what sepsis would be multiplied tenfold, perhaps a hundredfold.

DR. GOFFE explained that he had not stated just when the examination should be made, but what he meant was that the woman should not pass out of one's hands until it was known whether the cervix had or had not been injured.

DR. POLK said that if a practice was a good one in the hands of careful physicians, we should not be deterred from speaking of it and adopting it because harm might result from it in the hands of careless persons. They had their pun-

ishment in the responsibility which they were held to by their patients. He wished to impress the fact that fear of making a vaginal examination had often prevented physicians from finding the true cause of so-called puerperal fever, which they might attribute to malaria or something else which had nothing to do with its causation. If modern surgery was of any value in disease within the peritoneum, it was of as much value in disease within the uterus, and we could not hold back from applying it here through fear somebody might make a wrong use of it.

DR. CLEMENT CLEVELAND thought the subject was of great interest, not only to physicians, but to all who had daughters to bring up. It had been dealt with in an instructive manner in a work by the late Dr. Edward Clarke, of Boston. He (Dr. Cleveland) had once been in charge of a large clinic and saw many cases of laceration of the cervix and perineum among poor people, and in women who had large pelves, the majority of whom should not have had these lacerations. On investigation he had found that a large number of them had been confined by members of the medical profession, men of large practice, who had very little time, and, owing to the low fee received, did not wait for Nature to complete the process, but used forceps before complete dilatation of the cervix had taken place. The women, on the contrary, who were delivered by midwives seldom had lacerations. This point was worthy of serious attention—the indiscriminate use of forceps among poor people who were able to pay only a moderate fee. According to his observation, they were far better off in the hands of midwives than in the hands of men of our profession who had not a conscientious regard for the welfare of their patients.

DR. KRUG said there was one factor in the causation of disease in the female sex which he regarded as of importance, and which had not been mentioned in the paper. In the same way that matrimonial excess had much to do with troubles in married women, so had masturbation in the unmarried, in girls. Unfortunately, this habit lay largely beyond the control of the physician; still, the family physician might exercise a good influence through the mother. Excess in this direction weakened the general system and hindered development of the sexual organs.

DR. A. P. DUDLEY thought that, so far as development was concerned before menstruation, physicians could do very little. If we wished to reach the girl through the parents, it would first be necessary to educate the physicians, who, as a rule, seemed to little appreciate the primary causes of uterine troubles. He wished to call attention to the influence of heredity. Whatever might be the gymnastic training and

education subsequently, some children came into the world destined to be illy developed. Among habits, he thought none played a more important part than that mentioned by Dr. Krug—masturbation. One factor in the causation of female complaints, which had not been mentioned, was the apparent influence of a sea voyage. He had seen at least a hundred cases in dispensary practice, of girls ranging from 14 to 19 years, who had been perfectly well until they came to this country, since which time they had suffered from amenorrhea and neuralgic pains. Some of these points, and the one mentioned by Dr. Coe, of matrimonial excess, seemed rather beyond the control of the physician. Another fruitful source of uterine trouble was want of proper care after the occurrence of abortion. Many women and girls were unable to lay off for an hour after this accident, through fear of losing a position which they depended upon for a living.

When it came to the prevention of uterine disease at childbirth, he was in thorough accord with Dr. Polk. Any man who was properly educated in the obstetric art would not introduce into the vagina the unclean hand or anything likely to convey sepsis. The responsibility lay entirely with the physician. As to lacerations of the cervix, the cause was not always in want of development; the woman might have as large a pelvis as usual, or larger, the genital organs well developed, yet the child's head be so large as to cause rupture, whatever might be the precautions taken. If we allowed such a patient to lie on the back for several days, blood and secretions would accumulate in the vagina, the temperature would rise, in a little while the secretions would begin to decompose, and typical symptoms of sepsis develop without there having been any examination of the vagina at all. Because of the possibility of these accidents, and to avoid them, he did not hesitate to make an examination after delivery. He would then know whether it was best to give douches, or apply other treatment, or to let the patient strictly alone. If there was a laceration, one would be prepared for possible dangers from sepsis. Whatever might be the statistics, it appealed to his common sense that sepsis as a rule arose from the condition of the uterus, from retention of placenta, of clot, etc., and he felt that it was the physician's duty to cleanse the cavity. Within the past month he had seen four cases with a rise of temperature and chill, commencing septic trouble, and on entering the uterus had found a portion of the placenta. Curetting, washing, and touching the cavity with carbolic acid were followed invariably by recovery.

He closed his remarks by expressing the opinion that the prevention of uterine disease did not commence with edu-

cating the mother or daughter, but rather with proper education of the physician.

DR. A. H. GOELET thought that, as one means of preventing uterine disease, physicians should teach women, particularly married women, the necessity for using the vaginal douche. He believed there were many cases of disease of the endometrium caused by decomposed secretions in the vagina infecting the cervical endometrium, then travelling up into the uterine cavity. Decomposition did not take place until the secretions reached the vagina, and the vaginal douche became very necessary, especially after menstruation, and even more necessary after confinement. One observer, Czernieroski, has found the streptococcus, staphylococcus, and other forms of microbes in the uterine lochia of many women suffering from only slight illness.

DR. HARRISON thought that Dr. Polk and Dr. Dudley had not kept clearly in mind the distinction between treatment necessary when sepsis had developed and prophylaxis. Following out the suggestions of the paper which had to do with prophylaxis, he had stated that in this respect the less one examined the puerperal woman the better. In all cases of normal labor the uterine and vaginal secretions could be considered as aseptic, and the uterine canal was aseptic. There was no such thing as auto-genetic sepsis. All sepsis was introduced from without, and it was introduced in most cases by the hands of the accoucheur. We would not have to deal with sepsis if we did not put our hands into the vagina or uterus. Of course there was necessity for it when operative intervention was called for, but we were now considering normal labor, and here, he claimed, we ought not to make vaginal or uterine examination as a matter of routine.

DR. GOFFE thanked the gentlemen for the free discussion which had taken place upon his paper, and said that he had not spoken of possible causes of uterine disease which offered no opportunity for correction by the physician. For instance, we could do little, he thought, in preventing masturbation and marital excess. It was true that uterine troubles arose in the class of patients referred to by Dr. Waldo, but in them he thought there was lack of development, not from faulty education, but from want of nourishment and being badly housed. Prevention there, too, seemed beyond the power of the physician. Regarding puerperal septicemia, in all the cases which he had seen the hand had previously been inserted into the uterine cavity. The septic matter was introduced from without, almost invariably, he thought, by the hand or instruments.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Regular Meeting, December 11th, 1890.

The President, DR. W. H. WENNING, in the Chair.

DR. ARTHUR W. JOHNSTONE read a paper on

MENSTRUATION: ITS NECESSITY AND PURPOSE.¹

DR. R. B. HALL said, if we are to believe what is taught on this subject, the removal of the tubes and ovaries will produce an early cessation of menstruation.

He had specimens of two cases where the tubes were removed close up to the uterus; both of these women still menstruate regularly, although the operation was done over a year ago.

He always removes the tube as close to the uterus as possible, and as the figure-of-eight loop can be drawn up closer, he prefers it to using the Staffordshire knot. If not satisfied that the ligature is close up to the body of the uterus, he uses another ligature. In spite of all this care he still has two cases that continue to bleed.

DR. CARPENTER asked the essayist how he could well account for the absence of menstruation in those savage tribes in which it was said to be absent.

DR. G. S. MITCHELL thought that the ovaries played an important rôle in menstruation, at least during its establishment, it being a well-known fact that there have been cases regularly menstruating in which the uterus was absent but the ovaries present.

DR. JOHNSTONE, in replying, said the subject was so vast that he had been obliged to condense and limit his paper, as much as possible, to the physiological side of the question. He had merely attempted to locate menstruation in the animal world.

The multiple placenta differed widely in its development from the human. Lymphatics were much more abundant in this form of uterus than in the human. The human uterus must stand erect, and consequently could not depend on the loose network of a lymphatic tissue for its support. In the

¹ See original article, page 681.

multiple placenta, however, the cotyledons alone are used in development of the placenta. He was sure that mares did not menstruate. He had had abundant observation, and talked with many veterinarians who had large numbers of valuable animals under their care, and he was sure that where a bloody discharge took place from a mare it was due to a pathological condition.

Monkeys and most of the ape tribe had menstruated in an irregular sort of way, and they alone among lower animals assume the upright position. This has been thoroughly proven by Mr. Bland Sutton.

Referring to Dr. Carpenter's question, he said he had had many opportunities of talking with travellers, ship surgeons, and others whose lives took them among wild tribes, and he had never been able to find anything differing from ordinary menstruation among savages. It is possible that in some of the so-called tree-dwelling tribes, who are much in a horizontal position, menstruation may be irregular, just as it is among apes.

Stevenson's anti-menstrual pressure, associated with increased pulse rate, increased oxidation, accounts for the general disturbances connected with menstruation.

He then referred to the two cases of Mr. Tait, in which removal of the uterus brought on the menopause after excision of the appendages had failed. In both these he found a large branch of the pelvic sympathetic was still in the stump of the tube, and had been missed by the ligatures of the first operation.

Dr. Kelly also reports a case in which the removal of this stump alone had accomplished the desired end without the removal of the uterus. As for the interdependence of ovulation and menstruation, he did not believe it, for he had many times operated on cases just after menstruation and found nothing in any way resembling the corpus luteum. The truth is that ovulation goes on throughout life, beginning before birth and lasting to extreme old age, and it was his belief that it is the nervous system which ripens and brings on menstruation, and not the ovary as heretofore taught. Diseased ovaries cause menorrhagia and metrorrhagia, just as any other irritation of the pelvis will disturb the laws of Stevenson's anti-menstrual pressure.

DR. RUFUS B. HALL presented a specimen of

UNILOCULAR OVARIAN CYST

removed from an unmarried woman 18 years of age. She first noticed the abdominal enlargement on the right side about thirteen months ago, which increased gradually, caus-

ing no inconvenience until about six months ago, at which time she first noticed pain during and for a few days after the menstrual period; the abdomen was quite tender to the touch, and at times she suffered acute pain. The suffering was never so severe as to confine her to bed, except upon two occasions when she could not be up for a week or more. At each menstrual period she suffered greater pain than at the previous one. Dr. H. saw her in consultation a few days ago, and advised an operation, which was performed to-day (November 20th). The cyst and contents weighed thirteen and a half pounds. The cyst is a very thin one, not more than one-eighth of an inch thick, is a beautiful specimen of unilocular cyst, and is presented, for that reason, while in a fresh state. There was a long, thin pedicle, and the tumor had rotated until the pedicle was twisted one and a half times around. That condition might account for the pain and tenderness of the abdomen during menstruation. The operation presented no difficulty, and she ought to make a prompt recovery.

DR. CHAS. A. L. REED presented two specimens of

PAPILLARY DERMOID CYSTOMATA

which he had removed a few days previously from a patient in the practice of Dr. Josh. Chitwood, of Connersville, Ind. The cysts were multilocular, with a considerable amount of solid tissue, and both had developed within the peritoneum. The latter fact is of interest, as the majority of papillary cysts develop within the broad ligament. On opening the abdomen the first thing that impressed the operator was a cluster of warty-like growths on the surface of the tumor. The nearly solid character of the cyst contents made necessary an enlargement of the incision. When the tumor was lifted out, it was found to be completely covered on its lower surface with these excrescences. The other ovary was found to be likewise cystic, the size of one's fist, and completely festooned with papillæ. On section both these tumors were clearly dermoid, as their contents abounded in fat, hair, bone, and other epithelial products. The parietal peritoneum within the pelvis was likewise covered with warts. It is a matter of interest that while dermoid cysts are not rare, and while papillary cysts are sometimes met with, the combination of these two types is out of the ordinary. Fleischlen reports such a case, and Olshausen reproduces the cut. On microscopical section by Dr. Scheibenzuber, these cyst walls were found to consist of firm connective tissue, fibrillated exteriorly. The inner layers abounded in cells. The papillæ were composed of connective tissue holding within its meshes both spindle-shaped and round cells. The epithelium of the

villi was thicker than that on the cyst walls, and the cells at the apices were markedly cubical. As there were no evidences of active proliferating processes found, it is expected that the papillæ remaining upon the peritoneum will prove innocuous.

DR. REED also presented a specimen of a

DERMOID MONOCYST OF THE OVARY

removed by him at the Cincinnati Free Hospital for Women that morning. There was nothing remarkable about the specimen, as it was a single cyst, the size of a California navel orange, and contained long locks of hair. The interesting feature of the case, however, was that the growth had been painless until very recently. Dermoids are ordinarily painful.

DR. A. W. JOHNSTONE said, with regard to Dr. Reed's case, that it was fortunate that the papilloma was removed. He did not want to open up the subject of dermoids; every graduate was acquainted with them. He would not have pronounced the specimen such without microscopical examination, but as the essayist says the tumor contained oil, it certainly settles the subject.

There are two different kinds of papilloma: first, the ordinary wart which always gets well, and, secondly, that class which, unfortunately, in a majority of cases has a tendency to become carcinomatous; remembers a case he saw, while with Mr. Tait, which illustrated this fact very forcibly to speaker. His own experience is confined to three cases of papilloma, one of which he operated on three years ago, and it has returned, and in his opinion is carcinoma.

It is also recognized that warts can stay on the hand for an indefinite period, and that through irritation they may undergo cancerous degeneration.

If by operation it is proved that we do save only a small portion, it is certainly a great gain. In his opinion it is certainly our duty to remove them, because the majority, for some unknown reason, eventually become carcinomatous.

TRANSACTIONS OF THE OBSTETRICAL AND GYNECOLOGICAL SOCIETY OF WASHINGTON.

Stated Meeting, May 16th, 1890.

DR. J. TABER JOHNSON, *President, in the Chair.*

DR. W. W. JOHNSTON read a paper

ON THE FREQUENCY OF CHRONIC DIARRHEA IN WOMEN: ITS
CAUSES AND TREATMENT.¹

DR. S. S. ADAMS referred to the two etiological theories that chronic diarrhea was (1) of local, (2) of nervous origin.

He had seen it more often in men. In one man, who suffers from nervous diarrhea, the mere suggestion causes great desire to have a movement from the bowel.

Frequency of stools will cause rapid emptying of the bowel before digestion is complete; this may be due to an irritation of the nervous plexus in the lumbar region. Polyuria in nervous women is often traceable to a nervous influence, and is not necessarily caused by neurasthenia; the diarrhea is the effect of the nerve symptoms rather than the cause.

He coincided with Dr. Johnston in plan of treatment; was glad that Dr. Johnston referred to the use of artificial foods; he himself had found them absolutely useless.

DR. JOHNSTON, in answer to a question by the President in reference to the discoloration of the skin from the continued use of the nitrate of silver, said he had had no experience personally with this effect. He referred to a case where nitrate of silver was ordered in solution as a nasal application. The physician left the city for a considerable time, the patient continued the drug, and a pronounced discoloration followed.

DR. WOODWARD referred ("Med. and Surg. Hist. of War," part ii., page 780) to a case in which this effect followed after four weeks' administration of nitrate of silver.

DR. JOHNSTON said he was glad to hear Dr. Adams' opinion in regard to artificial foods. He considered it most irrational to give such foods to patients who, from the nature of the

¹ See original article, page 699.

disease, were unable to digest starch. Predigested starch, as in Mellin's food, is less open to objection.

DR. ADAMS said he had used Mellin's food in these cases and for children, but not with good effect. He thinks it induces flatulence and does not satisfy hunger. The tendency among those who devote much thought to the study of infantile dietetics is to discard all kinds of manufactured infants' foods. They depend upon sterilized cow's milk as the best artificial food for infants.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Annual Meeting, Wednesday, February 4th, 1891 (continued).

A. L. GALABIN, M.D., F.R.C.P., *President, in the Chair.*

Specimens.—MR. ALBAN DORAN, for Mr. Ernest Hart, Ancient Gold Ornament from Crete representing a Woman in Labor in the Upright Position. DR. HANDFIELD-JONES: Specimen of Ovary from a case of Hemorrhage after an Accident. DR. RUTHERFORD: Uterus removed by Vaginal Hysterectomy. DR. WHEATON: (1) An Ovary containing Three Dermoid Cysts; (2) Early Tubercular Disease of the Uterus. MR. MALCOLM: The Uterine Appendages, showing small Multilocular Ovarian Cysts. DR. HERMAN: (1) Case of Submucous Fibroid presenting at Os Uteri ten days after Delivery; (2) A Case of Cancer of the Uterine Body, illustrating the Difficulty of Diagnosis between the Disease and Senile Endometritis. DR. HERBERT SPENCER: Congenital Diaphragmatic Hernia. DR. J. PHILLIPS: Blighted Ovum with Fleshy Condition of the Decidua.

The subject of the midwives' education and registration was then entered upon, and a discussion followed, which has been already reported on page 638 of this JOURNAL.

Wednesday, March 4th, 1891.

J. WATT BLACK, M.D., *President, in the Chair.*

Specimens.—DR. BLAND SUTTON: A Case of Tubal Pregnancy. DR. HAYES: (1) An Intra-uterine Sessile Polypus; (2) Subperitoneal Pediculated Fibroid Tumor of the Uterus.

DR. CRAWFORD : Ovarian Tumor with a Polypus in the Uterus and a Small Tumor and a Fibroid Tumor. DR. GREGG : (1) Cyst (tubo-ovarian ?); (2) Pyo-salpinx complicating Pregnancy; (3) Double Pyo-salpinx with Tubo-ovarian Cysts; (4) Matted Appendages.

PRESIDENT'S ADDRESS.

The President thanked the Society for the honor conferred upon him. He congratulated them upon the prosperous condition of the Society. He then dealt with the subject of puerperal fever and septic poisoning. In ancient times puerperal fever had been described as suppression or retention of lochia. It had been referred to in the seventeenth century. According to Copland, the first satisfactory account of it was contained in Halle's "*Dissertatio de Febre Puerperum*," published at Leyden in 1689. The first writer who had given an adjective name to puerperal fever was Richard Morton. Edward Strother was the first writer who used the name "puerperal fever." The numerous outbreaks of puerperal fever which had occurred in the second half of last century had led to the production of a considerable number of monographs on the subject, especially in this country. The chief of the writers were John Hall, 1755; Thomas Denman, 1768; Nathaniel Hulme, 1772; Charles White, 1773; John Leake, 1773; Thomas Kirkland, 1774; William Butler, 1775; Philip Pitt Walsh, 1787; John Clarke, 1793; and Alexander Gordon, 1795. In these writings puerperal fever was referred to as erysipelas, putrid fever, putrefactive fever, pituitous fever, bilious fever, gastrobilious fever, typhus fever, typhoid fever, nervous fever, inflammatory fever, peritoneal fever, hysteritis, uterine phlebitis, lymphangitis, and many different diseases such as existed under other circumstances, but modified by the puerperal state. References were then made to the writings of Dr. Nathaniel Hulme and Dr. William Butler. Puerperal fever had been attributed to many causes. Amongst them might be mentioned suppression, retention, and putrefaction of the lochia, retention of secundines, retention or metastasis of milk, severe labor, tight binder, rising too soon after delivery, mental emotions, errors of diet, use of stimulants, exposure to cold, epidemic influence, miasms, and hospital air. Veson attributed the mortality at the Hôtel Dieu to the fact that the lying-in ward was over the ward for the wounded; also that the number attacked with puerperal fever was greater when the air was moist. Dr. Kirkland had recommended that the patient should sit up two or three times a day, in order to facilitate discharge of the lochia, clots, etc.

Charles White, F.R.S., surgeon to the Manchester Infirmary, was the first to assert the infectiousness of puerperal fever (1773); other writers had previously discussed it, but only to discard it. Some supported the view, but it was Dr. Alexander Gordon, of Aberdeen, who brought facts to prove its infectiousness. He also had given an admirable account of the relation of erysipelas to puerperal fever. In 1851, when forty-five cases of puerperal fever occurred in the practice of one man, while none of the patients of the other practitioners in the same place had been attacked, no other explanation had been required than that it was a dispensation of God's providence. A belief in its infectiousness had led to precautions being taken, and thus outbreaks had been frequently arrested or checked. The next most important advance was the tracing by Semmelweis of the infection to the introduction of decomposing animal matter into the genital passage by the attendant. The revelations of bacteriology and the proved prophylactic efficacy of antiseptics have set the question at rest. Many interesting facts in bacteriology were then given. The experiments of Ahlfeld were related, in which he showed that the inner surface of the uterus possessed its greatest absorbent power on the third, fourth, fifth, and sixth days after labor. Edmund Falk had also shown that the endometrium possessed remarkable absorbent powers, while the vagina had very little and the mucous membrane of the cervix scarcely any. It had not yet been ascertained to what cause was due the great diversity in the anatomical changes produced by puerperal fever in different cases. In all cases of puerperal fever, microbes of the coccus order were to be found, and most frequently of all the streptococcus pyogenes. As the microbe came from outside, the autogenetic origin had been virtually abandoned. Of late, however, it had been revived in a modified form. Czerniewski had examined the uterine lochia of eighty-seven perfectly healthy women, and had found no microbes of any sort, except in one case in which there were streptococci and in the two cases in which there were bacillus subtilis and sarcinæ. He had examined the uterine lochia of seventy-seven women suffering from slight illness, and had found streptococci in forty-nine, staphylococci in two, and non-pathogenic forms in a few others. He had examined the uterine lochia in ten women who were suffering from severe illness, and had found streptococci in all. Homen found the number of bacteria much greater in the first day of menstruation than before menstruation had begun. Dr. William Taylor, of Edinburgh, believed that he could trace certain cases of puerperal fever to the want of proper cleanliness on the part of nurses who happened to be menstruating at the time.

The results of experiments by several observers were then given. Hausmann had found that serum from the body of a person who had not died of septicemia did not produce fatal results when introduced into the vagina of gravid rabbits, while pus from the abdomen of a woman who had died of puerperal fever had proved rapidly fatal when similarly injected in the second half of pregnancy. It had no effect when injected into the vagina of rabbits only two weeks pregnant. The conversion of non-pathogenic into pathogenic microbes under altered conditions was then referred to; also the relative resistance of healthy and diseased or injured tissue to the influence of microbes. The influence of microbes in the production of mastitis and of various infantile diseases was fully described. Natural immunity was next discussed, as well as acquired immunity, or the exhaustion theory.

A vote of thanks was given to DR. WATT BLACK on the motion of DR. PLAYFAIR, seconded by DR. CHAMPNEYS.

REVIEW.

PRACTICAL TREATISE ON ELECTRICITY IN GYNECOLOGY. By EGBERT H. GRANDIN, M.D., Chairman Section on Obstetrics and Gynecology, New York Academy of Medicine; Obstetric Surgeon, New York Maternity Hospital; Obstetrician, New York Infant Asylum, etc., and JOSEPHUS H. GUNNING, M.D., Instructor in Electro-Therapeutics, New York Post-Graduate Medical School and Hospital; Gynecologist to Riverview Rest for Women; Electro-Gynecologist, North-Eastern Dispensary, etc. Illustrated. Octavo, 180 pages. New York, Wm. Wood & Co.

The keynote of this excellent little manual of electro-therapeutics is sounded in this sentence which occurs in the preface: "The agent is considered, not from the standpoint of a specific, but as a valuable adjuvant to routine therapeutic methods." An undercurrent of conservatism runs through the book, which will tend greatly to win for it the confidence of those readers who have been repelled from the study of this subject by the extravagant claims of a few electrical enthusiasts.

The plan of the work is simple. It embraces six chapters, the first of which is devoted to a discussion of theoretical points and descriptions of the necessary apparatus; the second

is entitled "Routine Uses of Electricity"; the third deals with electrolysis, the fourth with static electricity, while the brief concluding chapters treat of the application of the agent to the galvano-cauterization of malignant growths and the use of the faradic current in obstetrics. The space allotted to general considerations and the description of apparatus is disproportionately great, since it includes nearly one-third of the entire work (fifty-four pages); not that it is not most interesting and instructive, but it is a little too extended for the general practitioner. The discussion of the theory of electricity is both clear and original. Chapter II., on "Routine Uses of Electricity," will prove to be of the greatest value to those who seek for information regarding the practical office use of the agent. We are in hearty accord with this introductory sentence: "Much of the discredit which in certain quarters is cast at electro-therapeutists is due to the fact that too much has been claimed by the enthusiasts who rush frantically along every new road."

Amenorrhœa is mentioned as the first condition which is benefited by electricity, attention being very properly called to the fact that, "before resorting to the agent, strict differentiation of the probable cause of the amenorrhœa is requisite." "Lack of general or local nerve tone" is regarded as the primary indication for its use, the faradic current with the bipolar electrode being preferable. The treatment of dysmenorrhœa is briefly discussed, the authors being markedly conservative. "Neuralgic dysmenorrhœa" (a vague term) is best relieved by galvanism. Chronic ovaritis and ovaralgia (better oöphoralgia) are considered briefly but judiciously; few who have used electricity for the relief of this condition will deny that its results are most satisfactory as regards the relief of pain. We have not found it necessary or advisable to go as high as fifty milliamperes. The section on displacements is admirably conservative, and offers a pleasing contrast in its tone to the statements of the ultra-enthusiasts. The authors insist that "a fact to be emphasized is that the use of electricity does not, as has been claimed, enable us to dispense with pessaries." We commend as worthy of careful consideration the short but most suggestive paragraph on the treatment of flexions and stenosis (page 77). The subject of disease of the uterine appendages receives the attention which its importance demands. To those who have been prejudiced against the electro-therapeutists by their wholesale denunciation of abdominal surgeons, we commend the happily-worded remarks on page 81. In our opinion, they put the matter in a nutshell. No candid reader can deny that this much-vexed subject is treated broadly, yet with perfect fairness. Note the summary: "In weighing the evi-

dence at our disposal . . . the assertion appears warrantable that in electricity we possess a most valuable adjuvant method of treatment of the stubborn affections under consideration, and that, in justice to his patients and to his specialty, the gynecologist is in duty bound to test it faithfully and intelligently before resorting to laparotomy, which operation should be made the strict *dernier ressort*, except where the physical examination gives unmistakable evidence of the presence of a tumor, from the discharge of the contents of which into the peritoneal cavity a peritonitis may be predicated."

Electrolysis is thoroughly discussed in Chapter III. No extravagant claims are made for this treatment in the case of uterine fibroids, but it is merely urged that Apostoli's method be given a fair trial before resorting to a radical operation. Gunning's method is described in detail; it consists essentially in the use of a vaginal ball electrode in case of non-hemorrhagic fibroids, which are usually regarded as suitable for electro-puncture. "It would be a great gain indeed," he concludes, "were it found possible to affect fibroids without the necessity of cauterizing the endometrium or of resorting to puncture."

The chapters on galvano-cauterization for malignant growths and on electricity in obstetrics are short, but contain a good deal of information. This comment applies to the book as a whole. It is unusually compact, important truths being stated briefly and to the point; but this condensation is by no means at the expense of clearness. Although modest and unpretentious, we regard it as by all means the best work on the subject which has yet appeared, being pre-eminently conservative, and hence a safe guide for the tyro. It goes far to reconcile the conflicting claims of the electrical and non-electrical gynecologists, whose strife still waxes hot.

An especially valuable feature of the book is the excellence of the illustrations, which are not only new, but are beautifully executed. Many illustrations only serve to darken knowledge. These do not; they show everything at a glance—the highest commendation that can be bestowed upon the cuts of a scientific work. The authors' style is plain and unassuming, but clear. With some few exceptions, this combined work is moulded into a harmonious whole, without too abrupt a transition from one individual's ideas to the other's. We prophesy for the book not only general popularity, but a favorable reception from specialists.

H. C. C.

ABSTRACTS.

1. EICHHOLZ (Kreuznach): UTERINE IRRIGATION OR INTRA-UTERINE CAUTERIZATION? (*Der Frauenarzt*, 1890, Hft. 12, December).—The author gives statistics to prove that during epidemics of puerperal fever the mortality was higher in cases in which intra-uterine injections were made than when they were omitted. In Gusserow's clinic, *e.g.*, the mortality was 3.8 per cent, the injections being used, and after they were omitted the mortality was reduced to 0.39 per cent. Breisky and Fehling made similar observations in 1877. E. claims that the injections are at times not only useless, but may be dangerous, for it is possible to bring infection into the uterus by introducing foreign material from the vagina. The injections have in many cases produced symptoms of poisoning. Steffek reports a case which ended fatally after the use of a corrosive-sublimate injection (1:5,000), in a woman who was delivered of a macerated fetus in the fifth month, the symptoms of poisoning appearing one hour after the injection; the patient died on the seventh day. Maurer observed a case of poisoning due to an injection of carbolic acid. The author gives another reason to prove that the injections are dangerous, namely, the fact that the fluid enters directly into the venous system, and also that it may be carried into the system through the Fallopian tubes, as evinced by pains in the abdomen, general peritonitis, and death. Chrobak collected eighteen cases of death due to the use of intra-uterine injections of caustic fluids. He furthermore claims that we have to consider the amount of pressure used in injecting, as also the quantity. If the pressure is at all great, considerable irritation is produced; consequently there must be no pressure and the quantity must not be too great. He therefore concludes that it is better to make direct applications, and recommends the use of chloride of zinc (fifty per cent) as practised by Rheinstädter. His method of employing the zinc is as follows: He introduces a Trelat's speculum into the vagina, carefully cleansing the external genitals and the vagina by means of cotton soaked in corrosive sublimate (1:1,000). The cervix is then drawn down and the canal dilated. Next he cures the uterus, and then makes a uterine application by means of a brush—the thickest portion of which does not exceed five millimetres—dipped in chloride of zinc (fifty per cent). The vagina is then cleansed again,

and a cotton pad placed over the vulva and changed when soiled. The brushes are never to be used more than once. Author reports twelve cases of premature births treated in this manner with most excellent results.

He summarizes the subject as follows:

1. That uterine irrigation, used as a prophylactic measure or for therapeutic purposes, is not as valuable as is generally believed.

2. When we consider its inefficacy on the one hand, and its dangers on the other due to entrance of air and water into the vessels and tubes and the danger of poisoning, we must consider it preferable to adopt other methods.

3. This method can in the majority of cases be replaced by the application of ZnCl_2 , as described by Rheinstädter. It is not as dangerous as is irrigation, and undoubtedly disinfects the interior of the uterus much more thoroughly.

L. S. R.

2. VON SWIECICKI (Posen): A CASE OF BONY TUMOR OF THE PELVIS; CESAREAN SECTION; RECOVERY (*Der Frauenarzt*, 1890, Hft. 12, December).—Patient was 32 years of age. Ten years previously had a difficult labor. Labor began at full term, pains normal. On examination no cervix could be felt, but a hard mass about the size of a child's head was felt, which almost completely filled the pelvis. After a careful examination the cervix was at last found to be situated up behind the symphysis, and through the os the tense, protruding membranes could be felt. By careful manipulation the canal was entered, and thus the child's head could be felt. By rectal examination (knee-chest position) it was ascertained that the tumor grew from the sacro-iliac synchondrosis. Owing to the fact that this tumor almost filled the entire pelvic cavity, Cesarean section became an absolute indication.

The patient was operated upon at once. An elastic ligature was placed around the cervix, the uterus incised, and this incision came down to the placenta, which lay on the anterior wall. Placenta was separated with the fingers, and the child was then extracted with the membranes intact. Child slightly asphyxiated, but was soon made to cry. Uterine hemorrhage was very slight. The uterus contracted immediately and was then sewed up by means of Turner's silk, going through the entire thickness of same. The elastic ligature was then removed, the uterus was allowed to fall back in the pelvis, and the abdominal wound closed. The operation lasted thirty minutes. On the ninth day the stitches were removed, and the patient left her bed on the twentieth day. The tumor was probably a chondroma, this

in all likelihood having existed ten years previously, making the first labor difficult, but of course being then much smaller.

L. S. R.

3. ROTH (Winterthur): THE TREATMENT OF PROTRACTED LABORS (*Der Frauenarzt*, Hft. 1, January, 1891).—The author coincides with Playfair in his views both as to causation and treatment of the different stages. He gives rigidity of the cervix as the cause in the first stage, and recommends chloral (gr.15)—repeat every twenty minutes until three or four doses have been given—quinine (gr. 15 to 30), morphine, mechanical dilatation with the finger or with rubber dilators, and incisions into the os.

A protracted second stage he believes to be due to weak labor pains, rarely to a narrowness of the vaginal inlet. For this he recommends stimulating the uterus by rubbing, application of a binder, and, if this does not succeed, the use of the forceps.

L. S. R.

4. GAULARD (Lille): EMBRYOTOMY AND CESAAREAN SECTION IN CONTRACTED PELVES (*Der Frauenarzt*, 1891, Hft. 2, February).—The author cites a case in which the patient had consulted another physician before coming to him; the physician advised her to have a Cesarean section performed. This she declined, and on coming to consult the author he recommended craniotomy. This was consented to. The operation was performed without any difficulty, and the patient made an excellent recovery. Author then raises the question as to whether he or his colleague was in the right. He cites the following arguments as given by the defenders of Cesarean section:

1. We are forbidden to take a human life.
2. The life of the child is as valuable as that of the mother, and we have no right to sacrifice the one for the other.
3. Embryotomy destroys all the children, but does not save all the mothers, and *in toto* sacrifices more lives than does Cæsarean section.

The author claims, on the other hand, that the life of the mother is more valuable than that of the child, and, since the mortality to the mothers is much less in craniotomy than in Cesarean section (Praeger' statistics, five to six per cent), he prefers craniotomy to Cesarean section.

L. S. R.

5. KÖTSCHAU (Cologne): A SHORT REPORT OF THE USE OF ICHTHYOL IN DISEASES OF WOMEN (*Der Frauenarzt*, 1891, Hft. 2, February).—Dr. K. was led to use this drug in a case of painful pelveo-peritonitis, with excellent results, after having observed that it acted well in relieving pain in cases of contusions or inflammations affecting joints, muscles, and

bones. He then began to use it generally, and reports 127 cases, of which 28 were cases of endometritis cervicis; 16 were cases of endometritis corpus uteri; 52 perimetritis (pelveo-peritonitis, exudations, salpingitis, and oöphoritis); 4 pure metritis, the adnexa not being involved; 27 cases of parametritis.

The cases of cervical catarrh were treated by making applications of ichthyol to the portio vaginalis. In acute cases six to eight applications were made in all, each one at an interval of three to four days and in conjunction with warm injections and general massage. Of the 28 cases, 19 were cured, the other 9 showed no improvement.

Applied to the body of the uterus it has proven as effective as iodine or chloride of zinc, and never causes the colicky pains which these drugs produce at times.

In the 52 cases of perimetritis, with the exception of 6, a rapid cure was effected. A ten-per-cent ichthyol-glycerin solution was applied on tampons, these applications being made twice a week by the writer and daily by the patients themselves, the patients also taking sitz baths daily. In the 6 cases no improvement took place.

Of the 27 cases of parametritis, 5 were not improved, except to slightly diminish the pains, 12 were completely cured, and the remaining 10 were markedly benefited, though not entirely cured. In all of these cases ichthyol pills (0.1 t. d.) were given internally. The pills seemed to improve the patients' appetites and to hasten absorption of the exudation.

In the 4 cases of metritis no benefit was obtained by the use of the drug.

The author, therefore, recommends the use of ichthyol; for, even where it did not cure the disease, it frequently relieved the pains.

L. S. R.

6. P. ZWEIFEL: SALPINGO-OÖPHORECTOMY (*Archiv für Gyn.*, Band xxxix., Hft. 3, 1891).—The object of this operation is the removal of a diseased Fallopian tube, the ovary not being included unless it be affected.

The operation differs materially from ovariectomy, owing to the fact that the enlarged tube is never freely movable in the pelvic cavity, nor does it have a distinct pedicle, but it is usually adherent to the adjacent organs and the peritoneum.

In some cases the adhesions are easily separated, but in many others this can only be done with great difficulty, and then only by tearing the tissues. The tendency to hemorrhage varies very much. In some cases the amount of hemorrhage is very alarming, but usually this hemorrhage is very easily controlled, owing to the fact that the hemorrhage usually comes from newly formed vessels, and in these the

hemorrhage quickly ceases. The other form of hemorrhage is much more difficult to manage. This comes from old adhesions, and, although the amount of bleeding is not nearly as great as in the first variety, still it is much more difficult to control. These bleeding points have to be carefully sought for and tied, for unless this is done they will not cease to bleed.

After opening the abdomen we usually find that the intestines are not adherent. In the pelvic cavity we discover a tumor, varying in size from an apple to that of a man's fist, which is adherent laterally to the uterus and posteriorly (behind the ligamentum latum) to the pelvic floor. When the tumor is deeply seated and not larger in size than a fist, the small intestines are seldom adherent. We have to be careful, in breaking up these adhesions, however, not to injure the rectum. The intestines are carefully drawn out and wrapped in towels soaked in thymol solution. The tumor is then gradually removed, beginning on the uterine side. After all the adhesions have been broken up, the ligamentum latum and ovary (if not diseased) are ligated, and then the tumor cut off by means of a flat thermo-cautery knife. We should always break up and tie off all of the adhesions before we attempt to control the deep-seated hemorrhage. This hemorrhage is controlled by ligatures. In only one of the cases about to be described was there a drainage tube inserted. It was removed after a few hours because all of the hemorrhage had ceased. In no case were any chemical styptics employed, the hemorrhage being controlled by means of catgut ligatures, and in a few cases by touching the bleeding points with a Paquelin.

Pain was complained of only in the cases of acute pyo-salpinx after the operation, this pain lasting one or two days. One of the cases had a pelvic exudation following the operation, as a result of rupture of the sac and entrance of pus into the pelvic cavity. Vomiting occurred in nine cases after the patients came out of the anesthesia. In nearly all the cases ether was employed.

Seventy-one cases were operated upon, with but one death, this occurring after 65 had been treated successfully. The indications for these 71 operations were as follows:

Pyo-salpinx.....	39	Hydro-salpinx and hemato-ova-	
Purulent salpingitis with hema-		rium.....	1
toma of ovary.....	2	Salpingitis purulenta.....	2
Hemato-salpinx.....	7	Salpingitis and peri-oöphoritis...	8
Hemato-salpinx and hemato-ova-		Peri-oöphoritis and cystic ova-	
rium.....	1	ries.....	3
Hemato-salpinx and pyovarium..	1	Tubal pregnancy (?) with salpin-	
Hydro-salpinx and peri-oöphoritis	4	gitis purulenta.....	1

In the cases of hydro-salpinx, where the uterus was normally situated, the sac was evacuated but not removed, and whenever it was possible an endeavor was made to keep the tube pervious. In the majority of the cases the tubes were filled with large masses of pus, and in some the ovaries also contained pus.

Where does the pus come from? It is natural to suppose that a pelvic inflammation is the original cause of the trouble, this usually being the result of a post-partum infection. In the majority of cases in which the tubes are filled with pus, the cause is undoubtedly a gonorrheal infection. There was one marked symptom in the cases of gonorrheal pyo-salpinx, that being a proctitis associated with a discharge of thick chitine-like, viscid, mucous shreds. This catarrhal condition, which was very obstinate, was only observed in cases of chronic gonorrhea, but in none of the other cases. In every case of pyo-salpinx we were able to ascertain that, with one exception, the husbands had had gonorrhea. We were enabled in many of the cases to find gonococci in the pus coming from the tubes. This was only true, however, in recent cases; in those in which the disease had lasted for months or years pus cells were found, but never any gonococci. In very old cases only a detritus could be found, and from this fact we would naturally suppose that the tumor would collapse and the tube shrink. This does not occur, because the sac becomes filled with serum, and consequently it remains as large as when it was filled with pus.

The process which goes on in the tube is as follows: At first a thickening of the walls takes place, due to formation of connective tissue, next an infiltration occurs between the muscular layers, and then later on the walls become thinner owing to a contraction of the connective tissue.

Besides the cases which could be attributed to gonococci, there were three in which streptococci were found and one in which tubercle bacilli were discovered. Operation produced a marked improvement. Another case showed Fränkel's pneumonia-capsulecocci, these resembling diplococci. The cases in which streptococci and capsulecocci were found always showed a rise of temperature in the evening. This distinguishes them from the cases in which gonococci were found, for in the latter there was usually no fever whatever, except when they were examined or exerted themselves, in which case a rise of temperature would immediately follow, but would soon fall again. In gonococci pyo-salpinx a swelling of the inguinal glands never takes place, this being the rule in the cases of pyogenic infection.

If we examine the patient under an anesthetic or when the abdominal walls are exceedingly lax, we can feel a tumor

on one or both sides of the uterus, it being only slightly movable and may be pushed upwards. It is not, as a rule, very painful to pressure, excepting when it is of the tubercular variety. We are able to diagnosticate the gonorrheal pyosalpinx by the fact that both tubes are affected. On the one side we feel the distinct tumor, and on the other side an enlarged tube. The pus is seldom if ever evacuated into the uterus, because the connective tissue becomes swollen and the tube wall becomes thickened, thus producing an obstruction. In the gonorrheal variety there is no tendency for the sac to rupture.

Regarding menstruation, thirty-five cases of the gonorrheal pyosalpinx were questioned. Of these, twenty-four had profuse menstruation, three in which it lasted for weeks; fifteen menstruating irregularly, coming every two or three weeks and lasting eight days. Twenty-seven of the cases complained of severe pain during menstruation. It is especially to be observed that the cases of streptococci and capsulococci pyosalpinx and those of hydro-salpinx did not menstruate irregularly, nor did they complain of pain during menstruation. This is explained by the fact that the gonorrheal variety affected the uterus first, causing an endometritis.

Besides this endometritis there existed a cervical catarrh in the majority of the cases. In many cases there was also a vaginitis associated with a thin, milky or creamy discharge. Only seven cases complained of a burning sensation when urinating. One case suffered from itching and burning upon the external genitalia. A number of these cases of pyosalpinx were treated by other physicians for perityphlitis, of course without benefit.

The symptom which brings the patients to the physician and leads them to desire an operation is *pain*. When the patient is in a recumbent position the pains cease, coming on again as soon as the patient walks or stands. In many cases they are extremely severe. These pains are due to tension upon, and irritation of, the pseudo-membranes which are formed between the tumor and the intestines and pelvic organs.

The disease, when of the gonorrheal variety, is rarely fatal. In the streptococcus variety, on the other hand, the danger is very great. It was impossible to obtain any accurate estimates of the condition of the patients after they were discharged from the hospital, as most of them were lost sight of. Of those kept under observation none evinced any psychical disturbances.

L. S. R.

7. CARL, ABEL (Berlin): ANATOMY OF TUBAL PREGNANCY (*Archiv für Gynäkologie*, Band xxxix., Hft. 3).—The author

reports two cases occurring in the practice of Dr. Landau. In the first case the patient died a few minutes after the arrival of the physician. In the second the patient's condition was so poor that no operation could be attempted; but in spite of rupture the patient rallied and made an excellent recovery. In Case I. the autopsy revealed a rupture of the right tube. The decidua was removed from the uterus. In Case II. pieces of decidua came away. Careful microscopic examinations were made of these specimens, and from these the author formulates as follows:

In tubal pregnancies occurring in the fourth to fifth week we find:

1. That the endometrium is about to become changed into a decidua. The compact layer, the so-called layer of Friedländer, is not fully formed.

2. The superficial epithelium of the decidua uterina is intact as late as the middle of the second month, although its form is materially changed.

3. The vessels which are found in the superficial layers of the decidua uterina are in all probability arteries and veins.

4. The ovary and tube on the unimpregnated side remain unchanged. The ovary containing the gravid corpus luteum is enlarged.

5. The cause of tubal pregnancy may be assumed to be due to a diverticulum in the walls of the tube or a marked tortuosity of the same.

6. That portion of the tube not included in the impregnated sac usually remains unaltered.

7. A decidua tubaria vera is formed upon the mucous membrane of the tube, having its greatest amount of development at the poles of the ovum. The superficial epithelium of the decidua serotina disappears, and is replaced by the endothelium of the freely communicating capillary vessels.

8. In the majority of the cases no decidua tubaria reflexa is formed. If one is formed it differs entirely from the uterine reflexa, owing to its small number of vessels.

9. The attachment of the chorionic villi to the decidua tubaria is extremely loose in the beginning of the pregnancy, but in some situations a complete union between the two is found.

10. The epithelium of the chorionic villi is of three varieties. The maternal capillary endothelium lies external to a double layer of fetal epithelium.

11. The intervillous spaces are composed of dilated maternal capillaries, whose walls are not penetrated by the chorionic villi.

LEONARD S. RAU.

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ORIGINAL COMMUNICATIONS.

THE CARE OF THE BLADDER BEFORE AND AFTER LABOR.¹

BY

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SOME apology is necessary for introducing such a trite theme for your consideration, especially as the reader has nothing new to offer. In our search for novelties we are often in danger of forgetting the elementary principles of our art. The most advanced student of a science may occasionally with profit refresh his mind by a review of his earlier teaching. We feel so familiar with the phenomena of normal pregnancy and parturition that it hardly seems as if we had anything more to learn. The various minor functional disturbances in the pregnant woman are quite naturally regarded as unimportant, provided that they do not assume pathological proportions. Yet how ill-defined is the boundary line between the normal and the pathological! Our

¹ Read at a meeting of the Obstetric Section of the New York Academy of Medicine, May 28th, 1891.

Chairman, in pleading for the Cesarean section on relative indications, has deplored the fact that obstetrics is "too little of a science." That it is not so is due to our neglect of the study of normal, quite as much as of abnormal, cases.

Comparatively little attention has been bestowed upon disturbances of the bladder in the parturient female. Writers on obstetrics lay but slight stress upon them. Gynecologists have done more to call the attention of the profession to the prophylaxis of diseases and lesions of this viscus, notably Dr. T. A. Emmet, who for many years has insisted upon the serious results due to prolonged pressure of the fetal head upon the neck of the bladder. Dr. Skene, in a recent paper read before the American Gynecological Society, has further emphasized the fact that the ureters are subject to certain lesions from the same cause. These lesions, whether of the urethra, bladder, or ureters, are often so obscure that only an expert can discover them; but their prevention lies within the power of every practitioner—in fact, it requires only an elementary knowledge of pelvic dynamics and the exercise of ordinary common sense. It is hardly necessary to allude to the changes which take place in the bladder under the influence of pregnancy. As the uterus enlarges, the cavity of the true pelvis is encroached upon and the lateral distention is necessarily greater than the antero-posterior. With the ascension of the uterus the bladder is drawn upward, especially during the latter months, when it is lifted almost entirely out of the pelvis. It is also pushed over to one side or the other, more commonly to the right, as the rectum occupies the left side. The ureters are also drawn upward, their direction being more nearly vertical than in the non-pregnant, and are considerably enlarged (as may be readily demonstrated by palpation), due, Winckel believes, partly to the dislocation of the bladder and partly to the direct pressure of the uterus. By bearing in mind these simple facts we are able to explain most of the vesical disturbances of pregnancy, which we may consider under the head of those due to mechanical causes and those referable to changes in the urine and to reflex nervous irritation. The true cause of vesical irritation, as you know, in cases of displacement, is not pressure upon the fundus of the bladder, but

traction upon its neck. This is the explanation of this phenomenon in pregnancy—until after the third month due to descensus of the uterus, later to ascensus. The increased congestion of the vesical mucosa may also be an etiological factor. The frequent and painful micturition and tenesmus which result from this traction may seriously affect the patient's health by preventing her from sleeping, thus keeping her in a constant state of nervous irritability. If there was previously prolapse of the uterus from weakening of the pelvic floor, this will be aggravated during the early weeks of pregnancy, and the vesical symptoms will be more marked. A pre-existing cystocele is increased, and secondarily there may occur retention and decomposition of urine in the pouch thus formed, which will lead to more pronounced and obstinate trouble. Increased acidity, a light grade of catarrh, in fact the same changes in the character of the urine which affect non-pregnant women may account for the vesical symptoms. Reflex causes, as is well known, are numerous. Hemorrhoids, or a fissure of the anus, a tender ovary, a severe erosion of the cervix—all these are recognized as etiological factors in vesical tenesmus. They are much more likely to exercise this peculiar influence in neurotic subjects during pregnancy, when the irritability of the nervous system is at its maximum. I have purposely omitted any reference to the more severe forms of bladder trouble during pregnancy which are enumerated in the text books—cystitis (simple or exfoliative), whether due to retroflexion, neoplasms, calculi, or accompanying pyelitis—since these are not likely to be overlooked or underrated. I would call attention, however, to the fact that retro-displacement of the pregnant uterus during the first eight or ten weeks is probably more common than is generally supposed, and is not recognized from the fact that as the organ enlarges and ascends the retroversion corrects itself. This may be a potent cause of early vesical irritation.

It may seem superfluous to refer to the vesical disturbances attending parturition. It is an elementary fact that direct pressure of the descending head may prevent the parturient woman from emptying her bladder; but the most superficial observer must have noticed that this is not the only cause. Before the head has engaged she may have the same diffi-

culty, either from pure nervousness or because she is required to assume an unnatural position. We are too apt to rely upon the statement of the nurse, or of the patient herself, and to mistake the dribbling of urine, or the voluntary passage of a small quantity, for complete evacuation. I have noted this error in the case of the most competent physicians and nurses. Olshausen (*Arch. f. Gyn.*, Bd. ii., 273) calls attention to the bend in the urethra caused by the oblique position of the head. Schwarz (*Zeitschrift f. Geb. u. Gyn.*, 1886, Bd. xii.) denies that the bladder is unable to contract firmly, and ascribes the ischuria partly to edema of the urethral and peri-urethral tissue, and partly to paralysis of the sphincter vesicæ, of nervous origin. In consequence of delay during the second stage the complete evacuation of the bladder is prevented, from purely mechanical obstruction. This doubtless occurs even when the head descends rapidly, as is shown by the frequent escape of urine during the expression of the placenta by Credé's method. Skene affirms (in the paper referred to) that "when the bladder and terminal ends of the ureters rest low in the pelvis toward the end of gestation, there is more liability of their being caught between the child's head and the brim of the pelvis during labor." This is most likely to occur if the membranes rupture during incomplete dilatation of the cervix ; but even when dilatation is complete, the anterior lip (with the bladder) is often allowed to become unduly stretched, through fear on the part of the attendant of indulging in "meddlesome midwifery."

The subject of ischuria during the puerperium is one of considerable interest, the scientific study of which has been much neglected in this country. The problem is by no means so simple as it appears at first sight. It has been explained loosely as due to paralysis of the muscular wall, though Winckel positively denies this. Schroeder, who is followed by the text books, attributed it to the increased cavity of the bladder following the sudden reduction in the size of the uterine tumor. Schwarz thinks that diminished intra-abdominal pressure is the principal etiological factor, as the same ischuria is seen after the removal of ascitic fluid or abdominal tumors. The dorsal position being the one in which this pressure is exerted to the least advantage, it is quite evident

why some women find it impossible to pass their water when lying upon the back, even after a rapid, easy labor.

Incontinence of urine in the puerpera, as Dr. Emmet has always insisted, is a condition which, if neglected, is a fruitful source of future trouble. In my experience it is usually due to a combination of two factors—hyper-distention of the bladder and paralysis of the sphincter from prolonged pressure of the head, in short, to neglect of the catheter during labor.

Cystitis is a not infrequent, but an entirely avoidable, complication of the puerperium. It is frequently due to the introduction of infection by the use of unclean catheters. But even when the catheter is surgically clean it is very easy to carry in some deleterious matter from the vestibule, when the vulva is not previously disinfected. How seldom this preliminary disinfection is observed, even by practitioners of experience, must have been noted by all of us who are accustomed to the rigid precautions of a maternity hospital. As Garrigues aptly observes (*"Am. Syst. of Obstetrics,"* vol. ii., 354), "the old way of drawing the urine under the bed-clothes was modest, but is irreconcilable with antiseptic midwifery."

Bumm and Doléris have shown that the diplococcus found in the urine of puerperal women suffering from cystitis is identical with a form which is constantly present in the lochial discharge, so that it is possible for bacteria to reach the bladder by extension along the mucous membrane of the urethra, even where no catheter has been used. It is hardly necessary to add that the vesical mucosa must be in a condition which would favor an infective inflammation, or that it would not occur in cases in which the external genitals were syringed off several times daily with an antiseptic solution. Though puerperal cystitis tends to spontaneous recovery, it may rarely assume an aggravated type (as shown by Boldt in his paper on "Cystitis Suppurativa Exfoliata Puerperalis," *New York Med. Record*, 1885, vol. ii., p. 497), or may lead to pyelo-nephritis (*Centralblatt f. Gynäkologie*, 1886, p. 443).

This hasty review of the etiology of vesical disturbances in the pregnant, parturient, and puerperal woman furnishes in itself an indication for the treatment, of which the follow-

ing is merely a brief outline. Any abnormal condition of the urine during pregnancy is to be corrected by proper diet (especially milk) and appropriate remedies. I have relieved more patients with irritation of the neck of the bladder by means of the old-fashioned flaxseed tea and cream-of-tartar mixture, than by any other drug in the pharmacopeia, or by local treatment directed to the supposed seat of the irritation. If the trouble is evidently a neurosis, local treatment will simply increase it by keeping the attention of the patient centred upon the bladder. During the first three months of pregnancy frequent micturition with moderate tenesmus may be disregarded, the patient being told that she will be relieved as the uterus rises out of the pelvis. If these symptoms are more aggravated, a local examination may reveal a retroversion or prolapse of the uterus, the correction of which, with the wearing of a suitable pessary for a few weeks, is all that is necessary to relieve the distressing symptoms. This is especially true of multiparæ with relaxation of the uterine supports and pre-existing prolapsus. It should not be forgotten that the cause of the vesical irritation may be a long-standing cystocele, with pouching of the bladder; in that case the patient must be instructed to avoid retention and decomposition of residual urine, by pushing up the pouch during urination, assuming a position on the hands and knees during the act if necessary. Intra-abdominal pressure is quite as active in increasing the physiological descent of the gravid uterus during the early weeks, and resulting traction upon the bladder, as in ordinary prolapsus. A properly-fitting abdominal bandage will do much to overcome this. While I do not believe in treating a pregnant woman as if her condition was a pathological one, I hold that with the progress of the obstetric science we ought to learn to reduce her necessary discomforts to a minimum. I habitually recommend the use of the bandage, even as early as the third month, with these cautions: First, that it must be worn as low down as possible, and *not too tight* so as to force the abdominal contents downward into the pelvis, thus aggravating the trouble which it is intended to relieve; secondly, that the bandage must be kept from slipping upward by means of

stocking-supporters, *not* by perineal straps, which are dirty and uncomfortable. The bandage can be worn throughout pregnancy, in the latter half of which it renders valuable service in relieving the pressure of the heavy, ante-displaced uterus upon the bladder and, indirectly, the traction upon the ureters.

Skutsch (*Verhandl. der Deutsch. Gesellschaft f. Gynäkologie*, Bd. ii., 1888, p. 120) recommends that women be taught to urinate in the dorsal posture during the latter weeks of pregnancy, in order that they may be able to keep this position during the puerperium, and presents statistics which he thinks prove that this preliminary practice will enable the majority to dispense with the catheter. This is quite unnecessary.

It would seem to be superfluous to insist upon the necessity of the bladder being emptied every six hours during labor, and of the accoucheur satisfying himself that this has been done, had I not so often withdrawn one or two pints of urine after this was supposed to have been done. Before the head is engaged the patient may be trusted to satisfactorily perform the act; but after it has engaged (and especially if it is long arrested in the pelvic cavity) we must not mistake an occasional dribbling of urine for complete evacuation. I prefer the soft rubber catheter when the head can be pushed up, the male elastic (softened by dipping it in hot water) guided by the finger when an obstruction is encountered. The metallic instrument was banished from my armamentarium long ago. Skene complains that during labor "so much attention is bestowed upon the management of the perineum that the more important dangers to the urinary organs have been largely ignored." I have already referred to the importance of replacing the anterior lip when it is carried down before the advancing head. Though vesico-vaginal fistula from neglected impaction of the head is now fortunately a rarity, there is still enough timidity as regards the early resort to forceps in such cases to lead to numerous cases of both temporary paralysis and permanent lesions of the urethra and neck of the bladder, which require the attention of the gynecologist.

A word as to obstetric operations. The first thing that we were taught was *always* to empty the bladder beforehand ;

but there are few of us who would not be obliged to plead guilty when asked if, in the hurry and excitement attending instrumental cases in private practice, we had always remembered this rule. Yet its neglect may lead to prolonged incontinence, if not to worse troubles. Support of the bladder during traction with the forceps is a wise precaution; the lateral motion (which I fear has not been generally abandoned) should on no account be employed, since there is considerable risk of injuring the ureters. In a case of high forceps, the cervix being incompletely dilated, these precautions are highly important.

The care of the bladder during the first week of the puerperium is the most important division of this subject; it is impossible to do justice to it except in a separate paper. After a difficult labor the attendant should assume that there will be some vesical trouble, either ischuria or retention, and should be on the lookout for it. Do not take the word of the nurse or patient, but note the actual amount of urine which has been passed. Dribbling of urine, frequent passage of a small quantity, imperfect contraction of the uterus—these should direct our attention to the bladder, which we shall very likely find distended, and even forming a tumor in the hypogastrium. I avoid catheterization, if possible, though I would never allow the patient to remain for ten or twelve hours without emptying the bladder. I have not found that hot applications do much good in these cases, and hot vaginal douches are properly ruled out after normal labor, as possible carriers of infection. Why cannot the patient empty her bladder? Simply because we force her to lie upon her back, in a position in which she exerts her abdominal muscles to the least advantage. Until recently I would have regarded with horror a proposal to let a woman sit up and urinate three or four hours after labor. A patient positively could not urinate while lying on the bedpan, and absolutely refused to be catheterized. I would not consent to her using the commode, so she took the matter into her own hands and got out of bed as soon as I was gone. After doing this for a few times, we compromised, and she agreed to let the nurse support her in a sitting posture on the douche pan. I now adopt this plan when the patient cannot urinate upon the back, and am not

sure that it is not preferable, as the bladder is thoroughly evacuated and clots are expelled from the uterus, so that involution is favored. Naturally this applies to normal cases, in which there are no present or pre-existing complications. If a catheter must be used, what is cleaner than a glass instrument, which is so cheap that the poorest patient can afford to have one exclusively for herself, a privilege which, unfortunately for them, is not always extended to the wealthy?

Inflammation of the mucous membrane of the bladder, especially if it affects the neck, is attended with symptoms so persistent and distressing that they throw into the shade all the sequelæ of the most severe obstetric or abdominal operation. The patient's life may be in actual danger from conditions which we regard as far more serious than the vesical trouble, yet she feels that if she can only get relief from that she can endure all the rest patiently. As regards the prophylaxis, it may be summed up in a word—cleanliness. Keep the catheter in an antiseptic solution (boiling it at the outset), disinfect the genitals before introducing it, and do not use the household bottle of vaseline, which vitiates all our elaborate precautions. A light grade of vesical catarrh may be cut short by simple demulcents and alkaline drinks, without local treatment. Avoid the use of the catheter, if possible. Irrigation of the bladder with a solution of boracic acid seldom fails to give relief. One aggravated case I succeeded in curing, after ordinary means had failed, by injecting a solution of nitrate of silver, which is rather heroic treatment. If the sensitive region is at the neck of the bladder, considerable relief may be experienced after the instillation of a few drops of cocaine solution by means of a medicine dropper or special pipette. The diet should be fluid and unstimulating (largely milk), beer, wines, etc., being interdicted. Patients with this form of vesical irritation are often made worse by a single glass of wine. In brief, the treatment of this condition in the puerpera must not be too active. Whatever may be attempted in the way of local treatment, we must never omit strict antiseptic precautions, lest we substitute for an innocent trouble a more serious one. Great circumspection is to be exercised in administering hypodermics of morphine to this class of patients. The drug usually works like a charm, but it is very easy to render the woman dependent upon it.

FIFTY YEARS' EXPERIENCE IN OBSTETRICS.¹

BY

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THIS is the Golden Age of the obstetric art. When Zeuxis and Apelles were painting those wonderful pictures which deceived birds and animals, and Phidias and Lysippus carving those colossal statues of gold and ivory, many of which were sold for their weight in gold—at that time, which has been by many considered the Golden Age of the fine arts, our art was far behind.

Hippocrates, a contemporary of these artists, begins his celebrated aphorisms with: "Life is short and art long; the occasion fleeting, experience fallacious, and judgment difficult. The physician must not only be prepared to do what is right himself, but also to make the patient, the attendants, and externals co-operate."

I quote the whole of the first aphorism, so wisely, so nobly expressed. But our art was then in its infancy, comparatively, as I will illustrate by other quotations from the same great man: "When the child presents double at the mouth of the womb, it should be pushed upward so that the head may come down."

"When a hand or foot protrudes it is to be pushed up in like manner, and the head made to present."

When, in feet presentations, the head is retained after the body is delivered, he advises us "to introduce a hand between the os uteri and the head, and deliver it."

When the secundines are retained, he orders us "to extract them slowly," and for this purpose directs that, the woman being placed on a stool, the child not having been separated, it is to be allowed to hang down, so that by its weight it may produce separation; and, "lest its weight

¹ Paper read before the Chicago Gynecological Society, February 20th, 1891.

should occasion too strong pulling," he advises "it be laid on wool, or bladders filled with water, so that when perforated the child shall sink down gradually and draw away the placenta."

Celsus directs us, "in arm presentation, to pull down the head with a hook in the eye, ear, mouth, or forehead."

Aetius gives as a cause of difficult labor, "A too compact union of the ossa pubis."

According to Eros, difficult labor is due to "tumefaction of the external parts," for which he advises "a sitz bath prepared with emollient herbs."

Avicenna states that the expulsion of the child is performed by the abdominal muscles, and this was the opinion of Galen. He directs baths before and during labor, and advises the "use of forceps in difficult labor, the child to be extracted by them." "This," says Francis Adams, the translator of the works of Hippocrates, "proves that the Arabians were acquainted with the use of the forceps."

Haly Abbas mentions imperforate hymen among the causes of difficult labor. Baudelocque reports such a case, so does Burns, and I too have had a case; of course the hymen was not imperforate, but was unruptured.

Haly Abbas directs, in rigidity, to "make the woman sit in a warm bath prepared with chamomile, etc., and to take internally an infusion of swallows' nests"—probably the edible birds' nests so valued by the Chinese.

So much for ancient midwifery. Nor did it improve much through nearly two thousand years. With the discovery of the art of printing began a new era in the arts and sciences. The ease with which one able man and close observer transmitted his knowledge to his fellow-man, and he in turn to his followers, thus exciting a noble emulation, soon brought our art rapidly forward, and we have works, written a hundred years ago, varying but little, and in minor details only, from our present and almost perfect state. It makes me proud to read such a book as that, say, of honest James Blundell, with his repeated warning against "meddlesome midwifery"; to read his direction for the management of everything that may happen to you as an obstetrician, and to know by your own experience that everything he says is

true, his advice pure gold. He lectured eighty and more years ago.

Denman, too, so reliable and satisfactory ; Cazeaux, one of the most complete manuals ever printed—you never look in him in vain ; Velpeau, valuable for the neat manner with which he gives us the benefit of the enormous experience of those wonderful women, Mesdames Boivin and La Chapelle ; the lively Gooch, and the sound, reliable, painstaking Ramsbothams, and in this country the patient, indefatigable Dewees, the brilliant Meigs, and last, but not least, the invaluable Lusk—these books, glorious monuments to their authors, better than “storied urn,” stand on the shelves of our libraries or lie conveniently at hand on our office tables, generally well thumbed ; and we all know that they made us.

During the early years of my professional life I went to every case of childbirth with dread and fear of an impending calamity. I constantly read the dear, good writers upon the subject, and faithfully followed their teachings. I was watchful, patient, and tried not to be meddlesome. Years of success gave me confidence, and I have come to be, perhaps, too far the other way—too easy and sanguine ; but I never go to a case, even now, without something of the feeling of a man going to jail—a man going to be “confined” himself. The leaving of a pleasant home for an uncertain time, the dropping of every other pursuit, the going to reside in the abode of anxiety, uncertainty, and misery, make the life of an accoucheur one of great self-denial and often of downright physical and mental endurance ; and yet the happy ending of a bad case, “mother and child as well as could be expected,” is a most delightful experience and pays for all.

I graduated in January, 1843, at Geneva, N. Y., and, with the exception of a three months' trip to Europe in 1855, have been constantly busy in the practice of my profession ever since. During that time I have attended, in round numbers, three thousand five hundred cases of childbirth. I never saw a woman die in actual labor, and was never called to a case that I left undelivered.

I divide my time into three periods—the first of thirteen years, while a resident of a thriving and beautiful town of some five thousand inhabitants in Central New York, where

I attended seven hundred cases, none of which were of sufficient interest to be worthy of especial mention. No placenta previa, no arm presentation, no eclampsia—two face presentations being the most troublesome I met with in those days. I was shy in using forceps, having too much trouble in making them lock, not having then learned the trick of depressing the handles. I only recall three cases in which I used them. It was there I learned how Nature, if given time, would overcome what seemed insurmountable obstacles, moulding and shaping the soft, yielding head till it would travel through a strait at first deemed impassable. I had but one death there, from what I now know was uremic poisoning. It occurred thirty hours after labor.

In this city, from 1856 to 1871, I had quite a large obstetrical practice. All records were burned in our great fire, but I am sure I place the number low enough at fifteen hundred cases. In 1857 I had my first arm presentation—a midwife's case, who had dallied with it all day—but kind Nature, as she almost always does in preternatural presentations, had withheld hard pains, and the turning was easy and quite successful.

The bugbear of my existence had been for years placenta previa, and one stormy, dismal night in March, 1859, I found myself confronted with such a case in a remote place in the Rolling Mill district. There was much flow and a small, rigid os. I tamponed at once with extra care, and sent a messenger for Dr. Clark, of South Halsted street, a capable, reliable man of the old régime, lately deceased. Dr. Clark had attended the mother with her previous children, and when I explained that the present was one of the most dangerous incidents that could befall a poor woman during child-bearing, the family wanted him sent for, and so did I. After a few hours the tampon began to leak badly and the pains were severe. The doctor had not yet arrived, but so much blood had been lost I dared not wait longer, so removed the tampon and found an easily dilated os which readily admitted my hand, the placenta barely covering it. The turning was easy, my arm preventing the escape of the waters. The child was dead; and I will say now that, out of eight cases of placenta previa which I have attended, I have delivered but two liv-

ing children. The next case of the kind followed this one in a few months, and is only interesting from the fact that, being a midwife's case, she had risked waiting until the head, pressing past the placenta, had checked the flow and the labor proceeded naturally. I have attended a lady twice with placenta previa; in both cases turning was easy, but in the last the patient lingered three weeks and died. I was not able to define satisfactorily the cause of her death, nor could the eminent counsel who saw her with me.

Of arm presentations I recall seven cases; all turned easily, but the death rate of the children was high: either three or four died.

For the next period, from 1871 to 1891—twenty years—I have my visiting lists, and from them I gather that during that time I attended thirteen hundred and odd cases, of which a disproportionate number were instrumental. I have for many years been called upon by German midwives in my neighborhood to deliver their bad cases, or extract adherent placentas, or turn out clots in internal hemorrhages, and this should give me a broader margin of percentage for losses; and yet I shall not claim it, for there has actually been no loss. As I said before, I never saw a woman die in childbirth, and I have often asked my professional brethren if they had, and almost always the reply is in the negative. But I have had three deaths within twenty-four hours after labor—one at six hours, from exhaustion following a breech presentation. The patient, a very unhappy young widow, pretty and fat, tired of life, would not make an effort, and the labor, a dismal failure all the way through, was finished at last by a blunt hook, leaving her completely exhausted. She could not rally, and died at the end of six hours. The next fatal case was an arm presentation; the woman a poor, dissipated, broken-down creature, who, with a midwife and attendants much like herself, had been in labor all night. I saw her at noon, and had no trouble in turning and delivering, and left her quite happy at being out of her misery. I found, in the morning, that she had died at daylight, dropping off so easily that it was believed she had fallen asleep. The third case I do not remember so well, but think it was simply a tedious labor. The patient died twenty-four hours

after delivery. They were all three simply cases of exhaustion. These, and the uremic-poisoning case in New York, and four other cases—one of which was a most interesting case of pyemia, in which death occurred thirty-five days after delivery, and which was worthy of a long and full report—are the only ones of death from the dangers of gestation or delivery that I can at this time recall in my whole experience.

Twice I have felt compelled to use the perforator. The first time was in a frontal presentation, when, for some cause, we could not make the forceps hold. The next was in a vertex presentation, with face in the hollow of the sacrum. It was a curious case—a heavy, stolid German woman of 40. She had been delivered of three stillborn children, and I had had the good luck to deliver her of a large, fine living child—forceps delivery—two years before. In her fifth confinement the presentation was good, and, after waiting long and giving her a fair chance, I applied the forceps. If I had tackled the Rock of Gibraltar I could not more signally have failed. Then I thought of the best doctor for physical strength within reach, and he was sent for. He tugged away till he was tired out, when the family remembered a remarkably skilful “little” German doctor, who, after a short trial, concluded he could not do it, and we put our heads together and settled on craniotomy. The family would not consent, and another eminent and stouter German doctor was sent for, and he bothered us for hours, trying and resting, and trying again. He finally gave in, and we settled down to the perforator. The baby had been dead for hours. After reducing the head to the smallest dimensions possible with the cranioclast, we could not move it. We removed the frontal and parietal bones, and by that time there was a slight gain, and after mutual efforts, that lasted altogether three hours from the time I sat down with the perforator, the brave little patient was delivered, nor was there any very serious trouble afterwards. She was in bed three weeks, but has never conceived again.

I cannot recall a single death or serious harm following a forceps delivery. Since learning to use them neatly, I apply them early, but always give Nature a good chance. In my midwife cases I satisfy myself that they are necessary before

using them. I use them slowly, imitating Nature. I do not consider an hour or two out of the way at all, and I have had them on and off for a day or two, once or twice, with a perfect recovery of the mother.

I have been peculiarly fortunate in regard to hemorrhages after delivery, never but once knowing that my patient's life was in great danger. It was a most interesting and instructive case, but too long for this article. Only once in my entire experience have convulsions seized my patient during labor, or before or after. She recovered, the baby still-born during coma. I have seen a dozen or more cases in consultation, with seven consecutive cases that recovered. I have much faith in venesection, but there are cases I would not bleed. I have not been a strenuous advocate for hurrying delivery; Nature almost always delivers. That forced delivery is a *sine qua non* is absurd.

I have had two cases of encephalic monsters and two of spina bifida.

I used anesthesia in labor much more frequently formerly than now. I fail to see its value in most cases, and only use it when the os is, from any cause, very tender and sensitive, or when I am about to undertake a painful obstetrical operation. I have patients who insist upon it, and in such cases yield gracefully and do the best I can. If not carried to complete insensibility, the use of anesthesia does not often interfere with the progress of a case, and serves to divert the patient from a too complete consciousness of her pain. But, owing to the varying susceptibility of women, it is not always possible to stop at exactly the right point, and quite lately I have lost a child, a fine, stout boy, from my patient passing to complete anesthesia (in an instrumental case) the moment the baby's head passed the external soft parts. Now, while it is allowable to make tremendous traction with the forceps upon an undelivered head—the shoulders easily following the head—after the head passes the vulva the situation is completely changed. The shoulders now have to overcome the resistance of the soft parts, and, unless our efforts at extraction are backed up by good, strong, expulsive pains, it cannot be done by any amount of tension we may safely apply to the head, and the blunt hook is the instrument we have to

depend upon. In this case my patient was noisy and troublesome till the head was delivered—having had but a few drops of chloroform—but the moment the head was delivered she became completely insensible. The child, a very large one, lay face downward, and the sphincter vaginae caught him as neatly as any garroter could have done; he gasped for breath two or three times, and though I had a good blunt hook at hand and quickly applied it, at the same time trying to take off the compression of the soft parts, I did not succeed in delivering until the child was hopelessly gone. I had delivered this woman three times previously, with forceps, of living children, but without chloroform.

I have used ergot quite frequently ever since I began to practise midwifery, at first in inertia only, viz., when pains were feeble; of late years for other purposes, principally for hemorrhages. I have never seen harm result from its use, save in one case over forty years ago. In a tedious case, with the os well dilated, the ergot acted most violently. I have never seen anything like it since. The child was stillborn, and no doubt the use of the forceps would have been much better. Midwives having too much to do use ergot constantly to hurry their cases; and if you happen to get a patient formerly attended by a midwife, the chances are that your case will make but little headway until you use it, the patient having acquired what may be called the ergot habit. I have seen dozens of such cases. Using ergot for insufficient pains, we should have the forceps at hand. But why use ergot in such a case at all? The forceps skilfully applied is safer for mother and child. I never knew the mother to die after a forceps delivery, and very few children; I am sorry I am not able to say exactly how many, but I am sure I have not lost a baby that way for years, except the one just mentioned as lost through the use of chloroform during the instrumental delivery.

It would not harmonize with Nature's perfect work that a woman, in carrying out the principal object of her existence, the continuance of her species, should lose her life in giving birth to her child. Our artificial, luxurious mode of living, our refinements and cultivation, and development of the sentiments and emotions, and fineness of figure and fibre, render our women more liable to danger and disaster in child-bearing.

ing than when living plainer. But, fortunately, modern science has given the physician almost perfect methods of relieving her, and I have a conviction that there is nothing that can happen to women in which there is so little danger as child-bearing. And if women were taught this wholesome truth it would entirely change the color of their lives. Another conviction is that the pains of childbirth are enormously exaggerated in the vast proportion of cases. I have noted this fact in a great number of cases, and nearly all the ladies, when asked about the amount of pain, at the time have said it was much less than they had expected, and a few, a very few, have said "it was nothing at all." But there is this curious contradiction, that, while willing to speak lightly of the pain at the time of labor, when asked about it afterward all have said, without exception, that it was simply awful. So that it seems their testimony cannot be relied upon, and we have to draw our own conclusions; and, as I said before, from what I have seen I do not believe that in the majority of cases there is such severe pain as is usually supposed. And if we can make young women believe this too, we shall brighten the complexion of their lives and lessen the number of cases of abortion, of which I am about to speak. But before doing so I wish to bear testimony again to the value of the early and prompt application of the forceps in cases of threatened, tedious, wearying labor. It is but a pair of thin, elegantly made steel hands, which, backed by strong arms and skillfully applied, do better service in the cause of women than ever did those bright Toledo blades that cut such a figure in the annals of chivalry. For both mother and child we may say, as Sir Walter Raleigh said of the axe used to behead him, "It is a sharp medicine, but a quick cure for earthly ills."

ABORTION.

As nations grow more powerful and prosperous, and individuals devote themselves to the getting of wealth that they may lead lives of luxury and pleasure, a disposition to regulate the size of the family prevails, and the slaughter of the innocents begins; so we may say that abortion, like the free use of salt, marks a high degree of culture and civilization. It is not necessary to say anything of the causes of abortion,

which are as various almost as the cases. But I have had opportunities of seeing some curious and interesting results following "criminal abortion" which will interest you, and I will mention them.

In several instances fine, healthy, handsome young women, quite recently married, found themselves gravid earlier than suited their views, and caused criminal abortions to be procured. It was interesting, years afterward, when they desired to be treated for sterility, to learn from them the story of their folly. They had lost the ability to conceive. It was as if violated Nature was revenged.

In two of the cases the mothers of the young women had not only sanctioned the crime, but had gone with them to the abortionist. Many years ago I was the physician to a lady, mother of three healthy children, who became one of what I may call a colony of abortionists. A cultivated and accomplished young married lady with one child had moved into the neighborhood, and soon taught a number of the ladies, her more intimate friends, the art or trick of rupturing the membranes with a goose quill. My patient was one of the initiated. I will not attempt to say now how often I attended this lady with her abortions in the few following years; she had acquired the habit, and abortions would recur in spite of her. As soon as she discovered this it became the end and aim of her existence to have another living baby; it was years before she succeeded, then in less than a month the baby died with convulsions, and another and another succeeded, each succeeding one attaining greater age and the mother proportionately more fond. It was the most pitiful sight I ever saw, this anxious, pale, sad-faced mother watching those delicate children as they drooped and died. Finally one lived, a sturdy fellow, who as a child was the terror of the neighborhood, as a young man was a thief and could not be trusted in any way. In such manner may geniuses for good or evil be made. The lady who so thoughtlessly corrupted her friends is long since dead, though descended from a long-lived race. She was ambitious and desirous of a social position; they had been poor, but worldly matters went well with them, and she might have been living now, a happy grandmother, but for this most unfortunate turn in her affairs.

I am not able now to say how many cases of abortion I have attended. If I put them at twenty a year it would make the number a thousand; but when I say I have had four cases in the past month, and have always had a good number, it would not, at all events, be out of the way to say six hundred cases. I believe there were more; and when I add that I never saw a woman die from hemorrhage in abortion, a valuable and interesting fact is stated, and one which should bring a goodly degree of comfort to the unfortunate doctor who is compelled to attend these doubtful, confusing, tormenting cases. And speaking of hemorrhage reminds me that a former patient, mother of one child, much to her annoyance failed to menstruate at the proper time, and a month or two later, to her great delight, found herself flooding so violently that I was sent for. I put her to bed, enjoined rest and perfect quiet, and gave her an opiate. She lost an immense quantity of blood, large clots coming away; she hoped everything had passed. The same thing happened a month later; I did not see her, but at the proper time, six months afterward, delivered her of a fine, healthy child.

It is astonishing how long a time will occasionally elapse, after the death of the fetus, before it is cast off. I have had a case where three months passed after its death before it was expelled, the patient troubled all the time with a pink show. It is not necessary or desirable that I should say much about the treatment of cases of abortion; we all treat them similarly. I have found the hemorrhage easily controlled by the well-fitting tampon, and have never seen harm from its use. If the ovum is long retained and hemorrhages occur, we should try to get it; for, once the ovum is turned out, the bleeding ceases. I have known the ovum to be retained twenty-eight days, and finally discharged with very little show, perfectly inodorous and unchanged. If decomposition takes place, and there are very offensive discharges, the os open, and the cavity of the womb easily reached, I should say by all means turn it out; but if the external os is tightly closed, I should hesitate to invade the sanctuary on which Nature has written "No admittance." From a great number of cases that I have had of retained decomposing

ova which came away or were absorbed without harm to the patient, I have come to have little fear as to the result.

In a little book entitled "The Physician Himself," written by Dr. Cathell, of Baltimore, and dedicated to Prof. Austin Flint, Sr., I find these golden words:

"When you are importuned to produce abortion, on the plea of saving the poor girl's character, or to prevent her sister's heart from being broken, or her father from discovering her misfortune and committing murder, or to prevent the child's father from being disgraced, or to avert the shame that would fall on the family, or the church scandal, etc., etc., or to limit the number of children for married people who already have as many as they want, or for ladies who assert that they are too sickly to have children, or that their sucking child is too young to be weaned, etc.—you should meet them with a refusal as cold as ice, and never even seem to entertain the proposition. If they are too importunate, express your sentiments strongly." "How could any one but a fool be induced to take the burden from another's shoulders to his own by doing a crimson crime; to violate both his conscience and the law; to risk exposure, social and professional ruin, and the penitentiary, by putting himself into any one's guilty power, whether as a favor or for a paltry fee?"

A PLEA FOR EXPLORATORY ABDOMINAL SECTION IN THE EARLY STAGES OF TUBAL PREGNANCY.¹

BY

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BEFORE entering upon what I consider the train of symptoms which call for an exploratory laparotomy in cases of suspected tubal pregnancy, it seems to me proper to refer to certain articles, by the author of this paper, upon this subject which have been published during the past five years.

¹ Read before the New York Obstetrical Society, April 21st, 1891.

1st. In the eleventh volume of the Transactions of the American Gynecological Society (1886) is the report of a case of tubal pregnancy, the details of which are well known to the members of this Society.

In summing up my conclusions as derived from this case, and all others which I was able to gather at that date, the following statement was made :

"I would submit the following as embodying my own ideas as to the proper treatment to be resorted to in certain cases of undoubted tubal pregnancy: that in cases where a moderate hemorrhage has been positively diagnosed (whether from a rupture of a superficial artery or venous plexus, or from a partial rupture of the sac itself), and this hemorrhage has occurred prior to the termination of the fourth month of gestation, it is undoubtedly better surgery to perform laparotomy at once, and thus remove all possible danger of further hemorrhage, than to trust to electricity in any form.

"Cases of this kind, in which a positive diagnosis can be made, have been rare up to the present time, principally, I think, from the fact that the full significance of the so-called 'colicky pains,' with the shock and collapse, has hardly been appreciated. I am convinced that in these attacks there is always some bleeding, it may be very slight, from the superficial vessels of the sac; and that, as a rule, several (three or four) attacks occur before the real rupture of the sac takes place."

In a paper which I read before the New York County Medical Association on April 16th, 1888 (and published in the *New York Medical Journal*, April 28th, 1888), "On the primary removal, by abdominal section, of the tube and its contained fetus, in cases in which pregnancy has been diagnosed before rupture of any portion of the tube has occurred," the following occurs: "At a meeting of the New York Obstetrical Society held December 7th, 1886, in referring to a case in which he had diagnosed tubal pregnancy at the fifth week, Dr. Janvrin said: I infer from this case (and three others similar) that in all cases of tubal pregnancy where transient collapse symptoms suddenly appeared from the fifth to the seventh week of gestation, or even a little later, there was a rupture of one of the superficial ves-

sels of the sac; but the final catastrophe, severe hemorrhage, did not occur until later. The time to operate was when this preliminary or partial rupture occurred. Indeed, the primary collapse symptoms constituted an almost certain indication both of the pathological condition and of the need of immediate interference.

“In his opinion the history of the patient, the presence of a rapidly growing tumor at one side of the uterus, the presence of an irregular decidual discharge in a woman who had missed a period, associated with the normal signs of pregnancy and subsequent symptoms of shock and colicky pains, could hardly be referred to any other condition, even as early as the fifth week.”

Up to that date, April, 1888, I had *seen* two specimens besides my own in which this very condition was demonstrated at the autopsy. These two cases, together with the two others reported in my paper read before the American Gynecological Association in September, 1886, made five cases in which this condition had been absolutely proven at the autopsy. I consider that these five cases are sufficient to establish a principle, and that the statements made by me, nearly five years since, as to this pathological condition have been fully proven by these cases.

In addition to these cases I would refer to cases in which the secondary operation has been performed (when the tube has fully ruptured), cases reported by Johnstone, Kletsch, Tuttle, and others, in which consecutive layers of blood clots have been found, indicating different dates of extravasation, and going to show that there had been slight or moderate hemorrhage from the peritoneal surfaces of the tube before the *final* and severe hemorrhage took place.

At the March 20th, 1888, meeting of the New York Obstetrical Society, the subject of tubal pregnancy being under discussion, I said: “As for myself, in every case where I felt sure that there existed a tubal pregnancy, anywhere from the sixth to the tenth week, even in the absence of positive evidence of hemorrhage, but in the presence of the other symptoms, I would certainly resort to laparotomy rather than use electricity in any form.”

One more quotation from the Transactions of the New

York Obstetrical Society : At its meeting of April 3d, 1888, "Dr. Janvrin said that, in reference to tubal pregnancy, he had for some years taken the same stand that Dr. Tuttle now takes. He fully believed that this case of Dr. Tuttle's commenced as a tubal pregnancy; the attacks of peritonitis, brought on by slight bleeding from the distended tube, with the other symptoms, made it clear that it was a tubal pregnancy, and he would have expected to find it such.

"In all these cases, from the sixth to the twelfth week of gestation, the pretty severe attacks of colicky pains, with the other general symptoms, should lead us all to diagnosticate the condition; and when we are fully convinced that there is tubal pregnancy, even if there has been no decided hemorrhage and the patient's life is in no immediate danger, it is best to perform laparotomy. He did not believe in electricity at that time." I wish to state here that by the term "general symptoms" I do not, and never did, intend to be understood (as I have been charged) to mean the rational symptoms. If I had wanted to say rational, I should have done so at the time. The word, I believe, as given by our best authorities, means "having a relation to all; common to the whole; universal, etc.," and must therefore take into account *all* the symptoms in any given case or class of cases.

In the cases which have come under my observation, and which have been recognized early, the following train of symptoms has invariably been met with:

First, the passing one period, followed, usually within two weeks, by a slight bloody discharge, while at the same time the usual symptoms of pregnancy exist.

Second, the examination of the expelled fluid will generally show the presence of decidual membrane.

Third, by physical examination we find the os uteri slightly patulous, the uterus slightly enlarged and somewhat heavier than normal, and tipped to either the right or left of the median line, the deviation being away from the enlarged tube. The uterus is also flattened antero-posteriorly, and the cornua projecting toward either side. The mass itself is slightly elastic, slightly movable, *very sensitive to the touch*, and usually about the size of a pullet's egg.

There is also generally a strong arterial pulsation in the mass.

These symptoms certainly indicate the presence of a growth *outside* of the uterine cavity, with a fair probability that it is a pregnant tube; and under such circumstances it is certainly justifiable to explore the uterus with the sound. When this is done the depth of the uterus will rarely be found to exceed three inches, even up to the seventh or eighth week of gestation. Watching the case carefully for a few days even, we can easily notice the *very rapid growth of the tumor*, and the non-increase in the size of the uterus. It is during this period, from the fifth to the seventh week of gestation, as a rule, that we get the slight attacks of pain, accompanied by more or less shock, which I have attributed to the tearing of the peritoneal covering of the sac and the laceration of the nerve filaments therein; and this of course is, as stated before, accompanied by slight bleeding.

With such symptoms existing, it is the duty of every good abdominal surgeon to perform abdominal section. The condition is one which is becoming more serious every moment, and one which may at any moment result in a terrific hemorrhage into the peritoneal cavity and put an end to the patient's life at once.

It is not, in my opinion, justifiable to lose time, and probably the patient's life, by playing with electricity.

The condition is tenfold more serious and critical than that existing in the ordinary cases of pyo-salpinx or ovarian tumors; and while there is a possibility that we may be mistaken in our diagnosis, still there is an almost absolute certainty that we shall find, if not a tubal pregnancy, some growth which, according to the most advanced rules of abdominal surgery, should be treated surgically and not empirically—should be removed, and not left to kill the patient or to cause a long-continued state of invalidism.

As will be seen, all of the foregoing, in substance, I published in the different papers alluded to between September, 1886, and September, 1888. Since that time a good deal has been written by others, and quite a good deal has been done in the way of operations, bearing upon this subject.

It is my purpose to confine myself in this short paper to

those points which bear upon the very early diagnosis of tubal pregnancy ; and the remainder of this paper will be devoted to a few salient points gleaned from the observations and experiences of others who have been particularly interested in this matter.

J. Bland Sutton, in the "Erasmus Wilson Lecture," February, 1891, "On Some Points on the Pathology of Tubal Pregnancy," says: "Salpingitis so severe as to produce destruction of the total epithelium causes such profound changes in the tubes themselves as to lead to stricture and occlusion of the abdominal ostia ; it is exceedingly rare to meet with tubes denuded of their epithelium and the abdominal ostia patent." . . . "In several specimens of very early tubal pregnancy I have failed, even after the most careful microscopic examination, to find any evidence of old salpingitis or loss of epithelium." He further states that "during the fourth to the twelfth week of gestation the increase in size in the gravid tube is simply a turgescence, and not an increase in size and number of the muscle cells as in the gravid uterus."

By the end of the sixth week, or at the eighth at the latest, the swollen margin of the peritoneum "projects over the fimbriae and contracts and hermetically closes the ostium."

He further gives his ideas as to the pathological changes which so often occur in the ovum, resulting in the formation of "blighted ovum," "apoplectic ovum," etc., in the uterus, and states, "it would appear that an apoplectic ovum *in the tube* is a frequent means of inducing tubal abortion or rupture," and that "tubal abortion can only occur during the *first month*, when the ovum is small enough to pass through the abdominal ostium." With excessively rare exceptions, a pregnant tube "either ruptures or aborts at some period before the twelfth week following impregnation."

These conclusions are based upon very careful observations, and to me seem true as a whole. At the same time the specimen presented before this Society just one month since by Dr. Tuttle shows that tubal abortion *may* occur as late as the second month of gestation. If in nearly every case of tubal abortion the accident must "occur during the first month," we are forced to the conclusion that this method of extrusion of

the fetus from the tube is after all very rare; and we are compelled to accept as a fact that laceration, or partial laceration, of the tube is by far the more frequent accident.

In either case the same train of symptoms practically obtains from the time of conception up to the beginning of the extrusion of the fetus through the ostium or up to the beginning of the tearing of the tube by over-distention. In the one case there is slight hemorrhage *from the mouth* of the tube, in the other from a tear in the *peritoneal covering*. This slight hemorrhage accounts for the first few attacks of pain and shock and slight collapse, the other symptoms in all cases being, as I believe, identical, and as have already been described.

It seems to me that, with these symptoms, indicating, as I believe, a threatening of a most formidable, and too often fatal, accident to the patient, it is criminal negligence for any good abdominal surgeon to defer abdominal section. It is even more criminal to make use of galvanism or faradization in these cases of impending hemorrhage.

Even if the fetus is destroyed, the mass remains in the tube and renders that tube and ovary practically functionless, even if it should not ever give any serious trouble in after-life. Such trouble, however, has been witnessed repeatedly. The fetus has ulcerated its way out. Dr. Mann has reported two cases. In both of Dr. Allen's cases serious inflammatory trouble followed for a long time. Dr. Harris has also collected the history of quite a large number of cases in which serious and long-continued trouble has followed upon the killing of the fetus by electricity. With the perfectly satisfactory results which have attended the few cases already reported as operated upon by abdominal section before rupture of the sac, and the good results which have also attended the secondary operation (after the sac has really ruptured), we have every inducement and every reason, I think, to urge us to the performance of this operation *as soon as we are convinced of the presence of a fetus in the tube*, and before rupture of the tube has occurred.

It is the *ideal* operation for all such cases, and at the same time one which will constantly increase in numbers and prove one of the greatest boons to the human race.

MY PERSONAL EXPERIENCE WITH VAGINAL
HYSTERECTOMY.¹

BY

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No one to whose lot has ever fallen the care of patients suffering from the advanced stages of cancer of the womb, can but be strongly impressed with the tremendous amount of misery that this affliction involves for womankind. Can there be a more pitiful and mournful sight than the struggle of these poor doomed women against an inevitable fate, when the excruciating pains have become unbearable, when the hemorrhages have gone beyond control, while the growth of the deadly parasite is gradually eating up their vitality and encroaches further and further upon adjacent organs? Can there be any greater agony than when the patient commences to abhor herself, after the fetor of the discharge, combined with the result of the vesical and rectal complication, renders her an object of disgust, so that death appears to her like a long-expected friend from whom alone relief can be hoped? And all this while the physician, to whom the poor sufferer looks for help, has to stand by, utterly unable to successfully conquer the unflinching foe, barely able to afford even temporary relief. The opiates, even in the strongest doses, soon become ineffective to palliate the tantalizing pains; the troubles arising from the involved bladder and rectum can hardly be relieved in any way; and the fetid discharge and incessant hemorrhage are seldom amenable to more than ephemeral improvement.

Unfortunately this terrible disease of the female sexual organs is not by any means an uncommon occurrence, a rather large percentage of deaths in the female sex being due to it. No wonder, therefore, that a woman will burst out in despair

¹ Read at a meeting of the Obstetric Section of the Academy of Medicine, May 28th, 1891.

if she learns of her ailment, and bewail the day she was born. But are we really without any efficient means to combat this uncompromising enemy of womankind? Must we really look on as bystanders, and be satisfied with palliating the sufferings and putting off the fatal result for a while? Is there really no cure for it? And if there is a possibility of preventing the terrible end, is it not our imperative duty to give the poor sufferer the only chance to evade her fate? My own experience lets the outlook appear in less gloomy colors, and seems to warrant some brighter hope for the future.

We all know that our Pharmacopeia does not contain any effective weapon against this dreaded disease; and while we may confidently hope that some day scientific researches will reveal us the actual remedy, it must be readily conceded that at the present time we must look to surgical interference as the only means of effecting a radical cure. It stands to the credit of Prof. Freund to have first shown, on a scientific basis, the feasibility of total extirpation of the cancerous uterus, although the results of this operation were as deplorable in the beginning as the ravages of the disease itself. Still it levelled the path on which Prof. Czerny proceeded, until he was able to present the profession with his method of extirpating the uterus through the vagina—one of the greatest achievements of modern surgery. It was enthusiastically taken up by the gynecic surgeons of every country, and the most sanguine hopes were at once entertained as to its permanently curative effect. But, as in every other instance when enthusiasm has overswept calm reasoning—as in our recent experience with Koch's lymph—disappointment was bound to follow. Cases had been subjected to this operation which were utterly unfit to undergo it. A strong reaction was the natural result.

Numerous were the protests calling a halt to the unlimited use of this procedure, and, as will always happen, a good many were carried back too far by this reaction and have since condemned the entire operation. For years the controversy over the propriety of vaginal hysterectomy has been carried on, sometimes with a good deal of animosity, some writers going so far as to pronounce the operation almost criminal. For a long time this subject has been one of

more than ordinary interest to me, and I have faithfully kept track of the course it took. I have read the statements made *pro* and *contra*, have given them ample consideration, and I cannot but give it as my firm and honest conviction that the opposition to this valuable surgical procedure has gone too far, and I feel in duty bound to offer my views in support of it.

Summarizing the objections raised by the adversaries of vaginal hysterectomy in a few words, it has been said: 1. That the immediate results are too bad to warrant the performance of the operation—in other words, that it is too dangerous. 2. That the remoter results, that is, as far as its curative effect is concerned, are too discouraging—in other words, that it is too unreliable.

My own experience is contrary to both assertions. It is based on fifteen vaginal hysterectomies done by me during the last three years. Although this number appears small compared with the statistics of some European operators, it is as large as many reports published on this side of the Atlantic. Two of my cases (Nos. 12 and 13) were done for non-malignant disease of the uterus; one case (No. 10) is doubtful as to its malignancy, two well-known pathologists having disagreed in their opinion on the case; the other twelve cases were proved to be malignant by careful microscopical examination.

Out of fourteen cases in which I used ligatures exclusively in tying off the ligaments, I have not lost a single case. The only case which turned out fatal was No. 4, where I used forcipressure for the first and last time; septic peritonitis on the sixth day was the cause of death. Figuring this one in with the others, my mortality is still only six and a fraction per cent. I must therefore, from my own experience, indorse the opinion of most German operators that vaginal hysterectomy is not a dangerous operation, and dismiss from consideration the objection, often raised by its opponents, that its death rate is so high as to exclude the indication for it.

Is it an unreliable operation? Again my experience leads me to believe that it is not, provided the cases have been suitably selected.

Excluding the two cases done for non-malignant disease of

FIFTEEN VAGINAL HYSTERECTOMIES.

	Age.	Diagnosis.	Date of Operation.	
I.	25, Ipara.	Very soft, rapidly growing sarcoma of cervix.	June 16th, 1888.	Ligatures. Uninterrupted recovery. Perfect health for five months. Recurrence, death.
II.	38, IIIpara.	Epithelioma of cervix involving part of vagina.	April 17th, 1889.	Lig. Examined May 23d, 1891. No recurrence; perfect health; has greatly gained in weight.
III.	55, Opara.	Carcinoma of body of uterus; uterus very large.	April 20th, 1889.	Lig. Examined May 23d, 1891. No recurrence, perfect health.
IV.	51, VIIpara. 2 ab.	Epithelioma of cervix.	May 10th, 1889.	Clamps used. On day after clamps had been removed sudden rise of temperature; death from septic peritonitis 6th day post op.
V.	42, Opara.	Epithelioma of cervix extending to border of vaginal insertion.	July 8th, 1889.	Lig. Examined May 23d, 1891. Perfect health; no recurrence. Her weight has more than doubled since the operation.
VI.	65, VIpara.	Epithelioma of cervix.	Sept. 10th, 1889.	Lig. Letter dated May 24th, 1891, her daughter writes: "Mother is in good health and will see you in a few days."
VII.	27, IVpara.	Epithelioma of cervix.	Jan. 24th, 1890.	Lig. Examined May 23d, 1891. No recurrence; perfect health.
VIII.	48, IIpara.	Epithelioma of cervix; submucous fibroid.	April 2d, 1890.	Lig. Examined May 23d, 1891. No recurrence; perfect health.
IX.	67, Vpara.	Carcinoma of body of uterus; diabetes (5 per cent sugar).	April 26th, 1890.	Lig. Examined May 23d, 1891. Perfect health; no recurrence; no more sugar in urine.
X.	55, Vpara. 5 ab.	Malignant adenoma of endometrium (?); intramural and subserous fibroids.	Oct. 7th, 1890.	Lig. Examined May 23d, 1891. No recurrence; perfect health.
XI.	37, VIpara.	Epithelioma cervicis.	Oct. 24th, 1890.	Lig. Examined May 23d, 1891. No recurrence; perfect health.
XII.	} For non-malignant disease of uterus.		Oct. 31st, 1890.	} Perfect health.
XIII.			Jan. 16th, 1891.	
XIV.	39, IIpara.	Carcinoma cervicis et corporis.	Jan. 30th, 1891.	} Examined May 23d, 1891. No recurrence; perfect health.
XV.	45, VIIIpara.	Carcinoma corporis.	Mar. 17th, 1891.	

the uterus and the one in which there is a doubt about the diagnosis, there remain twelve cases of unquestionably malignant degeneration of the uterus, in which the diagnosis was confirmed by the microscope. Of these, one case (No. 4) died from the operation. Of the eleven surviving, in case No. 1 a recurrence took place five months after the operation, and the patient soon died from metastatic processes. The patient was a woman 24 years of age, and had a very soft, rapidly-growing sarcoma of the cervix. Although all apparently diseased tissue, including a portion of the vagina, had been removed, the recurrence was no surprise, considering the encephaloid type of the growth and the youthful age of the patient. All of the rest of them are absolutely free from recurrence and in perfectly good health. All of them have gained greatly in strength since the operation, the increase in weight, in some cases where the cachexia was most marked, being really astonishing—as, for instance, in case No. 5: the patient weighed not more than eighty pounds at the time of the operation, July 8th, 1889; her present weight is one hundred and sixty-five pounds. As will be seen from the tables, cases Nos. 2 and 3 were operated upon more than two years ago; in cases Nos. 5 and 6 almost two years have elapsed; in cases Nos. 7, 8, and 9 more than one year has passed; in the remaining cases the operation was performed from two to nine months ago, and it is therefore too early yet to draw any conclusions from them.

Being aware of the fact that my statistics differ widely from some others that have been published, and in order to have any possible error on my part excluded, I asked the chairman to select some one else besides himself, so that I might submit to them all my patients for examination before presenting this paper. This has been done, and I feel greatly indebted to Dr. Grandin and Dr. Coe for their trouble in doing so.¹

The question necessarily arises why I should have been more fortunate with my vaginal hysterectomies than other

¹ The examination of all the ten available cases took place on May 23d. Case No. 6 could not be present on account of extraneous reasons. Cases Nos. 12 and 13 were not invited, as the operation was done for non-malignant disease. (See table.)

operators. This is a somewhat delicate question for me to answer ; still I think the best way to pursue is to follow the lines laid down in Dr. Coe's paper, "The Limits of Vaginal Hysterectomy for Cancer of the Uterus," read before the Obstetrical Society on March 4th, 1890. In this valuable contribution, which is certainly the fairest one ever offered by those not in favor of the operation, after having given the results of his own and the late Dr. James B. Hunter's operations, he says: "In presenting these very unfavorable statistics, the writer is well aware that they are open to serious criticism in the following respects. It may be urged :

1. "That some of the cases were unsuitable for a radical operation.

2. "That the disease was not entirely removed at the time of operation.

3. "That the technique was defective."

The first and second points can be appropriately considered at the same time, as they practically cover the same questions at issue. Now, I must confess to the belief, although for evident reasons I can barely substantiate my assertion, that a good many patients have been subjected to vaginal hysterectomy who were clearly beyond the limits where the operation was justifiable, and that a great deal of the disappointment and the subsequent discredit thrown on the operation were clearly due to the fact that proper selection of cases was not exercised when vaginal hysterectomy was in its infancy. Contrary to the claims of some European writers, I feel strongly opposed to performing the radical operation, unless I have good reason to believe that all diseased tissue can be removed.

To decide this important question examination under narcosis is absolutely necessary, and has been practised by me in every instance, as even the most careful bimanual examination without the aid of narcosis will often prove insufficient to reveal important facts. Wherever I found positive proof that the disease had progressed so far as to exclude the possibility of drawing the boundary lines of the operation in healthy tissue, I have refused the radical operation, believing that it could not accomplish more towards prolonging the patient's life nor towards her comfort during the short time

allotted to her than the palliative methods. In some of those cases where there was a doubt whether the infiltration in the broad ligaments was due to an inflammatory or to a cancerous process, I have given the patient the benefit of the doubt, and resorted to the abdominal and to what I have called the laparo-vaginal methods, which offer greater facilities for removing the entire broad ligaments without injury to the ureters. Not in a single case, however, where vaginal hysterectomy was contra-indicated could I see any benefit from the so-called high amputation—that is, high amputation proper, without the use of the actual cautery.

This latter remedy is to my mind the only one from which any benefit can be expected in cases that are not amenable to radical surgical measures, and I am convinced that all the good results ascribed to high amputation are chiefly due to accompanying application of the cautery. Whether the aniline colors—pyoktanin, etc.—will ultimately prove a better help in inoperable cases of cancer will have to be shown yet; they certainly seem to be a valuable addition to our therapeutic means.

To come back to the point at issue: I will reiterate my statement that wherever the removal of all diseased tissue is impossible, vaginal hysterectomy is not indicated; and if recurrence takes place soon after it has been performed, it only goes to show that cancerous foci have been left behind, so that we rather ought to speak of continuance than of recurrence of the disease.

Before entering upon the third point laid down in Dr. Coe's paper—namely, the defective technique—I wish to state that I certainly do not intend to criticise the work done by others, but merely wish to offer some suggestions relative to avoidable dangers from the operation.

The first imperative demand is to have the field of operation absolutely clean and aseptic. I have good reason to believe that many a mistake has been made in that regard. Operators will have their instruments, sponges, their own fingers, etc., carefully disinfected, and at the same time will be satisfied to simply give a douche of some germicide in order to disinfect the vagina. In the light of modern bacteriological researches this is absolutely insufficient to sterilize even a

normal vagina, much less so in the presence of the fetid discharge from a corporeal carcinoma or a sloughing epithelioma of the cervix. I have no doubt that the failure to properly free the genital canal from pathogenic bacteria has often been the cause of primary infection of the peritoneal cavity.

The following is my method of obtaining an aseptic field for operation. As I invariably subject my patients to an examination under narcosis before ultimately consenting to do vaginal hysterectomy, I make use of the same narcosis, in cases found to be suitable for operation, to either thoroughly curette the uterine cavity in cases of corporeal carcinoma, or to remove all soft, sloughing tissue with the sharp spoon, scalpel, and scissors, in cases of cervical epithelioma. The Paquelin cautery is then freely applied, and for about a week or so frequent vaginal douches are given, sometimes tannic acid and iodoform powder are applied, until finally a clean-looking surface is obtained. During this preparatory treatment the management of the bowels receives special attention.

Directly before the operation the vagina is thoroughly scrubbed with mollin containing ten per cent of creolin, by means of a brush. After this mechanical cleaning a disinfectant douche of bichloride is given. Then only I feel as if I could rely upon my primary asepsis.

A second important point, which does not always seem to me to receive proper attention, is the care of the stumps after the extirpation. I do not want to go too much into details, but will only say that in order to secure perfect safety they must be treated extraperitoneally; in other words, their raw surfaces must be prevented from coming in contact with the intestines. If ligatures are used, this object can be easily accomplished by slightly inverting the stumps toward the vagina and carefully packing the peritoneal wound with iodoform gauze. I will admit that the use of forcipressure clamps does not necessarily exclude this step, but it does make it difficult.

I hope I will be excused for not entering at length upon the question whether ligatures or clamps should be used in securing the ligaments in vaginal hysterectomy. I have too often expressed my views on this subject in speaking and

writing. I will briefly say this: 1. It is poor surgery to leave any kind of a pressure forceps where the ligation of the blood vessels is possible. 2. It is a fallacy to believe that much time can be saved by using the clamps, as any operator, possessed of the necessary skill entitling him to do the operation at all, can tie as quickly as put on the clamps. I have done the operation in fifteen minutes, and ordinarily never require more than twenty to thirty minutes, and I fail to hear of clamp operations having been done in much shorter time. 3. If ligatures have been used, and proper asepsis be maintained during the operation, the iodoform-gauze dressing may be safely left *in situ* for eight days, when, on changing it, the peritoneal cavity will be found well closed by healthy granulations. On the other hand, it must be readily conceded by every one that it is fraught with great danger to disturb the wound twenty-four to thirty-six hours after the operation, before the abdominal cavity is shut off against the vagina, and, in taking off the clamps, to allow the necrotic stumps to slip back into the peritoneal cavity and come in direct contact with the intestines. From the published histories of many fatal cases I cannot but assume that this was the actual cause of the disappointing result. For my own part, I am convinced that the clamps killed the only patient I lost, and that if it was not for that I would be able to report to-night a series of fifteen vaginal hysterectomies without a death.

In presenting this paper to-night I do not wish to detract anything from the results which others, pursuing different ways in dealing with this deadly disease, have obtained. The reports of Dr. Byrne, of Brooklyn, and Dr. Baker, of Boston, are well known to all of us and deserve full appreciation. But I hope to have shown to-night that at least just as good results can be obtained with vaginal hysterectomy. However, I like to emphasize one point. In those cases where good results have been reported following high amputation and the actual cautery, the patients had to be under constant surveillance and treatment afterwards. Dr. Baker said, for instance, in discussing Dr. Coe's paper: "As soon as any suspicious spot made its appearance he cut it out and applied the actual cautery again." Now, to my mind,

a patient who has Damocles' sword constantly hanging over her, who has to have her womb thoroughly charred every little while, is hardly able to enjoy life and go about free and easy as if she was really cured. Quite different from this is the psychical condition of my patients, and I must appeal to the gentlemen who examined them to testify to that. They certainly appeared to be as healthy and cheerful a lot of women as if nothing had ever troubled them, the majority of them showing a marked contrast with their former condition, no treatment being required since the operation. For that alone, if for no other reason, I, for my part, would always advise the radical instead of the partial surgical procedure.

In conclusion let me say this: Since there is no doubt that if the disease has advanced to a certain stage nothing known to science is going to save the patient from her terrible fate, while, on the other hand, it has been proved that early surgical interference will cure a certain percentage of women, the question is now on the *early diagnosis* of cases. The wide difference in the results of European and American operators can only be explained by the fact that abroad the patient will come under the hands of a surgeon at an earlier period. I must, however, give it as my experience that, in this country, only in exceptional cases is the self-neglect of the patient the cause of her being seen so late by the surgeon. In the large majority of cases of inoperable cancer of the womb coming under my care which I have been able to trace back, the patient had applied to her family physician at the time when the first symptoms appeared, and I am somewhat loath to state that quite often an examination was not made at all, but the patient consoled in regard to her complaints with the worst phrase ever invented—"change of life." In other instances an examination was resorted to, but the physician either failed to make the proper diagnosis until it was too late, or, for some reason unknown to me, lost valuable time in prescribing ergot and different vaginal douches, or applying all sorts of caustics, astringents, and hemostatics.

The family physician, whose sacred trust it is to watch over the welfare of those who trust in him, ought to realize, first of all, that it is a matter of conscience and of great respon-

sibility to him to strive for an early diagnosis in cancerous diseases of the womb, or to avail himself of the experience of others should he be in doubt. Then, and only then, can we hope to successfully curtail the ravages of this unremitting plague; and should my humble contribution help a little toward reaching the goal, I should feel most happily rewarded.

TUBO-UTERINE PREGNANCY.¹

BY

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THE infrequency of this variety of ectopic gestation, and the consequent interest attaching to the subject, induce me to report the following case :

On April 4th last I was summoned to Flatbush by Dr. W. S. Applegate to see with him and Dr. J. L. Zabriskie a case of pregnancy with obscure abdominal complications. The history of the case, as given by Dr. Applegate, was as follows :

Mrs. X., age 28 years, married nine years, one child 7 years old; one miscarriage at the second or third month about six years ago; subsequently suffered more or less from pelvic ailments, attended with menstrual irregularities and moderate dysmenorrhea. Last menstruation November 10th to 16th, 1890. From that time was supposed to be pregnant. Nothing unusual occurred till January 10th, 1891, when she was seized with sacral pains and a bloody flow of about the same character and amount as her usual menstrual flow, and lasting for six days. Nausea and vomiting began from that time, but were not more troublesome than is common in ordinary cases of gestation. March 27th the patient was prostrated by a sharp attack of migraine attended with uncontrollable vomiting. This continued till the 29th, when she was seized with

¹ Read before the New York Obstetrical Society, May 5th, 1891.

a violent paroxysm of pain in the lower abdomen, and was compelled to remain motionless in bed. The pulse was found slightly accelerated, but there was no notable pallor or marked evidence of shock. The pain was relieved by an opiate. April 3d, seven days later, a second paroxysm occurred. Dr. Applegate then found the patient extremely pallid and showing signs of beginning collapse. Pulse 99. An hour later the pulse was 150 and the temperature $99\frac{1}{2}^{\circ}$ F.

When I saw the case on the following day the pulse could not be found at the wrist, and was counted at 160 over the heart; temperature 101° F. There was little or no tympanites, but the lower portion of the abdomen was extremely tender on pressure, so much so that a satisfactory exploration of the pelvic contents could not be made. The cervix, however, was found softened, the uterus much enlarged and tilted to the left. A little blood came away on the examining fingers, though the patient had positively denied any external hemorrhage since January.

On retiring to discuss the case, there was no hesitation in accepting the conclusion that we had to deal with an internal hemorrhage. This, with the history, made the diagnosis of ruptured ectopic pregnancy. The location of the misplaced fruit sac and the stage of gestation could not be so easily determined.

If the pregnancy dated from November, the period of gestation was consistent only with the assumption of a cornual or an intraligamentous pregnancy, if we except the ovarian variety, which is so rare that it could be practically ignored. The attack of pain and flooding in January occurred at the time when primary rupture might have taken place into the broad ligament; but that attack was not characteristic of rupture. Moreover, no evidence per vaginam had been found of a broad-ligament pregnancy. Was the bloody flow in January possibly menstrual, and did the conception date from that time? If so, we were perhaps dealing with an ordinary tubal gestation which had ruptured into the peritoneum at two and a half months. This seemed improbable from the history of nausea beginning about the middle of January and apparently characteristic of pregnancy. Yet simple tubal gestation could not be wholly excluded. The

diagnosis then lay between a pregnancy of one uterine cornu and a pregnancy in the free portion of the tube.

Still a more difficult question than the diagnosis was that of surgical interference. To do abdominal section in the condition of the patient was practically hopeless; to withhold it was certainly so. As the bleeding was in all probability still going on, there was nothing to be gained by waiting for the action of restorative measures. Desperate as the chances were, we decided to attempt to reach and ligate the bleeding point, and in this decision we were sustained by the friends of the patient.

The patient rallied perceptibly under ether, as we had hoped she would. A careful examination of the pelvic contents was then made; nothing further was revealed than had already been determined, except that the uterus was enlarged to about the size of a two and a half months' utero-gestation.

An incision of about two inches in length was made in the median line. The abdomen was found filled with bloody serum and clots, which were readily recognized before dividing the peritoneum. The pelvic organs were matted together by recent and some old adhesions, and there were evidences of a beginning general peritonitis. A gaping rent of one or two inches in diameter was found in the right uterine cornu. It extended upward from a point just behind the insertion of the right tube. The ruptured horn had retracted so completely that the shape of the uterus was nearly symmetrical. The walls of the ruptured sac were studded with villous placental fragments, to the largest of which the cord was still attached. At the other end of the cord the fetus was found floating among the intestines. It measured seven inches in length and weighed four ounces and four drachms. These figures correspond to about four and a half months' development. The peritoneal cavity was flushed with hot water to relieve shock and to assist in the removal of clots. The uterus was freed from its adhesions and lifted out of the abdomen. We were then confronted with the question what to do with the uterus; for on preparing to amputate I discovered that no wire clamp was at hand and no elastic ligature, nor any material out of which a clamp could be improvised. The ruptured cornu was therefore treated

as follows: The uterine orifice of the tube was dilated with the finger. The right tube and ovary were removed. The edges of the rent were then trimmed, the placental tissue was pared away, and also a thin stratum of the uterine muscle underlying it. The opposing surfaces of the cornual cavity were brought together with deep silk sutures. The peritoneal edges were closed over the line of deep suture with superficial stitches. The wound as thus closed was entirely comparable to the sutured incision after Cesarean section or rupture of the uterus. It was, however, smaller and the sutures less likely to be disturbed by uterine contractions.

Up to this time the condition of the patient had continued apparently better than before etherizing. While attempting, at this juncture, to arrest a slight hemorrhage from a torn adhesion deep down in the pelvic cavity, she suddenly became moribund and died.

Remarks.—The interstitial tubal variety of pregnancy, as Tait says, must be extremely rare. It is remarkable that in his experience of nearly a hundred cases of extra-uterine gestation he has seen but one of pregnancy in the intramural portion of the tube, and that a post-mortem preparation. Parry's thirty-one cases of interstitial pregnancy, in his table of five hundred of all varieties, Tait does not accept as true cases of pregnancy in the interstitial portion of the tube. In the large number of ectopic pregnancies recently reported I can scarcely recall a single case of interstitial pregnancy, with the exception of those which were believed to have ruptured into the uterus.

I have seen but one other case, and that a post-mortem specimen. The patient had died in collapse within twenty-four hours after the first paroxysm of pain. The fetus had developed to the second or third month. The uterus was presented before the Brooklyn Pathological Society by Dr. Leuf (Trans. Brookl. Path. Soc., 85-86), who had made the autopsy for the coroner. It measured $4\frac{3}{4}$ inches in length, $2\frac{3}{4}$ in width, and 2 in thickness. Unlike my case, the walls of the fetal sac had not fully retracted after rupture. While intact, the gestation sac had evidently formed a diverticulum from the right uterine cornu. Its lateral projection from the horn of the uterus measured $1\frac{1}{2}$ inches, its vertical diameter

2 inches. The rupture had occurred at the postero-lateral aspect of the gestation sac. The placental site was directly opposite the point of rupture. The shape of the uterus in Dr. Leuf's case is of interest in connection with the question whether the diagnosis of interstitial pregnancy is possible. The fact of a cornual pregnancy in this case surely should have been recognized before rupture, had opportunity presented for examination. On the contrary, when the ovum lodges and grows close to the uterine end of the tube, the development of the uterus is doubtless very nearly symmetrical, and the pregnancy could not in such a case be distinguished from normal utero-gestation.

With regard to the question of operating upon a patient *in extremis*, I think the attempt to control the bleeding is justified in a case dying solely from hemorrhage, which is apparently still going on. In the majority of cases of ruptured tubal gestation, to reach and seize the bleeding point is a comparatively simple matter and the work of but one or two minutes for an operator who has had any experience in the abdominal cavity. With modern methods, in most cases, the amount of shock is extremely small, and, the hemorrhage once controlled, the patient exchanges a condition completely hopeless for one that offers at least some chance of recovery. Abdominal section is surely more justifiable in such conditions than section, too often practised of late, for conditions which do not threaten the life of the patient.

MENSTRUATION: ITS ANATOMY, PHYSIOLOGY, AND RELATION TO OVULATION.¹

BY

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WITHIN the last twenty years the views concerning menstruation, its cause and purpose, have been very much

¹ Read before the Cincinnati Academy, February 16th, 1891.

modified in consequence of the results obtained by numerous investigators who have made this subject an especial study and research. We all are more or less familiar with the original work performed by Williams, Engelmann, Ercolani, Henle, Leopold, Waldeyer, Loewenthal, Reeves Jackson, Lawson Tait, Bland Sutton, and Arthur Johnstone, but only few of us have taken the time and trouble to consider and study carefully the merit, value, and importance of the results of the labor performed. I am free to confess that I have been one of the many who have devoted but a "passing" interest to the new theories concerning the physiology, manner, and mechanism of menstruation and its dependence upon ovulation, until I listened to a paper, read December, 1890, before the Cincinnati Obstetrical Society by Dr. Arthur Johnstone, entitled "The Function of the Menstrual Organ." Dr. Johnstone (formerly of Danville, Ky., now of Cincinnati, O.) is already well known for his original work upon the "uterine mucous membrane," and the views expressed in his essay of that evening were based upon a great many microscopic examinations of the corporeal endometrium of uteri (removed ante- and post-mortem) during, immediately prior, and after menstruation, as well as during the intermenstrual period.

In this paper Dr. Johnstone stated: First, that "in the ordinary acceptance of the term, the endometrium above the internal os is not a 'mucous membrane,' but belongs to the so-called 'adenoid' tissues, and that menstruation is for it exactly what the lymph stream is to the lymph gland or the blood current to the spleen." Second, that he agrees with those who believe that ovulation and menstruation are not dependent upon each other; that the function of the ovaries is carried on without the presence of the uterus, and the function of the latter is uninterrupted in the absence of the former. Third, that menstruation is peculiar to the human female and the higher class of apes, and is neither homologous nor analogous to the estrum (rut or heat) of the lower animal.

Nearly all modern text books (I know of but one exception) describe the uterine endometrium as a mucous membrane; all admit that ovulation (the ovaries) is the controlling influence of menstruation, though they may not occur simultaneously.

They do not deny that a woman may continue to menstruate after she has ceased to ovulate from whatever cause; that she may ovulate without the presence of the periodic flow of blood from the uterine cavity; but they are almost unanimous in maintaining that a woman who never ovulated (as in congenital absence of the ovaries) never really menstruated..

I was no stranger to the views upon menstruation entertained by Lawson Tait and his followers, but, like many others who were reared or lived in an atmosphere prejudicial to anything that may come from this source, I never gave them a continuous and careful consideration; and it is possible that not even now would I have done so, had I not been prompted by the conviction that Dr. Johnstone's theories were wrong and could be easily controverted. On the evening of the reading of Dr. Johnstone's paper I opposed the doctor on all the points he made but one—viz., the "adenoid-tissue" doctrine; this was entirely new to me, and, as it was on his part the result of many years of painstaking study upon the structure of the uterine endometrium, I had neither right nor reason to oppose it.

This effort of mine, then, was prompted by a sense of opposition, and when I began preparations I was certain that it would not be a difficult task to upset all that Dr. Johnstone maintained. The result of my inquiry is not what you may suspect. I meant to pursue and hoped to slay the adversary, but the more I studied and investigated, the more I weighed, compared, and examined the testimony furnished by Tait, Johnstone, Bland Sutton, and others, on the one side, with that of Tarnier, Martin of Baltimore, Engelmann, Williams, and a host of others, on the other side, the more I became convinced that I was on the wrong side of the question. In other words, I came, saw, and was conquered.

1. *What is the Anatomy of the Endometrium above the Internal Os?*—According to Johnstone, it is not a mucous membrane, but belongs to the so-called adenoid tissues. He discovered this fact while on some pathological quest, when he happened to get a good section of the adult endometrium and found in it identically the same he had observed in the study of the spleen, tonsil, thymus and lymphatic glands, as well as in the lymph tissues of the walls of the intestines—namely,

"that the sustentacular threads, which at one-fifth looked homogeneous, at one-twelfth contained a series of gradations from a granule that was barely visible at this power up to the full-grown corpuscles." He then "cut a great many uteri and thoroughly satisfied himself that he was correct." He further satisfied himself "that the corpuscles of the healthy endometrium are never found bifurcating, but that the developmental gradation is always present." Consequently he declares that "the tissue then belongs to that class of organs whose function it is to replace the organic waste, and that it ought to be ranked with the spleen and thymus gland, instead of the vagina and bladder." The doctor, at the reading of his paper before the Cincinnati Obstetrical Society, showed a number of drawings from a reprint of his essay, "The Menstrual Organ," read before the British Gynecological Society, 1886, which, if correct, verify his conclusions and justify the adenoid-tissue doctrine. In the essay just referred to, he also claims "that the organ" (uterus) "comes into the world in an active state, and that it is the first of the cytogenic tissue to finish its course and sink into aged obscurity; but it is equally certain that it is the type of the whole class. For, as we have long known of Peyer's patches, the tonsil, and other lymphoid structures, sooner or later they all follow its example, and, like worked-out mines, ruin and decay alone mark the spot of their former activity." The arrangement of the endometric tissue itself he describes as being "firmly bound to the inner layers of the muscular wall; the human endometrium is perforated in every direction by the so-called glands, whose ramifications convert the whole into a sponge-like mass, all of whose channels lead into the cavity of the body. Its epithelial covering consists of a single layer, which dips into every reduplication of the glandular canals and thus gives a protecting coat of soft protoplasmic tissue."

The above description of the corporeal endometrium, compared with that given by Cazeaux and Tarnier, Martin, Leishmann, Leopold, Henle, Spiegelberg, and all of the more recent of modern text books on obstetrics, will, upon careful study, reveal a great similarity notwithstanding the great differences in the speculative theories of the manner and mechanism of menstruation and its purpose. We find that

the innermost structure of the womb has received its proper attention at all times; and while it was known that it varied greatly in appearance from that of other mucous membranes of the body, no one, before the investigations of Johnstone and Bland Sutton, discovered its true character, with the exception, perhaps, of Henle, Leopold, and Spiegelberg, who recognized a great similarity between the uterine mucous membrane and adenoid tissue.

Johnstone does not divide the corporeal endometrium into three distinct layers—namely, the internal or mucous, the middle or chorionic, and the external or mucosa muscularis—as do H. W. Martin and a number of other quite recent authors; nor does this appear necessary, since he at once ventures upon entirely new grounds, not being content with a comparative similarity to other structures, but places the tissue at once where it belongs, among the cytogenic. This is the result of his original work. It has not been contested by similar efforts, but only in society discussions and upon indulgent papers in journals and in pamphlets. Since I am not in a position to bring proof to the contrary, I have made a careful study of both “facts and theories” as presented by the various writers whose works were at my command. To my surprise and against my wish, I was forced to the conclusion that Johnstone and Bland Sutton, both working independently of each other, have given us by far the most reasonable and satisfactory description of the character and function of the internal structure of the womb.

If we look over the descriptions of the “mucous membrane” of the uterus as given by Spiegelberg, Cazeaux and Tarnier, Thompson, Gray, Leishmann, Playfair, Winckel, and others, it cannot be denied that in many respects they agree, in the main, with the description given by Johnstone; and it also becomes evident that the latter is probably nearer the truth than any of the rest; but it appears that he is not the first to announce that the utricular glands are like the glands of Lieberkühn of the intestines, and that the whole endometrium is like adenoid tissue.

After listening to Dr. Johnstone’s interesting essay and reading the rest of his valuable and important work, I was not a little surprised to find the following (translated by my-

self) in the description of the mucous membrane given by Spiegelberg: “. . . it consists of a soft structure richly supplied with corpuscles and cellular elements, which, according to Henle, *resembles adenoid tissue (conglobirten drüsen)*, and, according to Leopold, of the finest connective tissue, to the bundles of which endothelium adheres, and the spaces between them are lymph spaces. . . . It is covered with simple ciliated epithelium . . . which is subject to a continual change with each menstruation. . . . Within the mucous membrane reside the numerous, hose-like, uterine glands; *they greatly resemble the glands of Lieberkühn of the intestines.*” This was written two decades ago, and it would seem, therefore, that, while the palm of originality cannot be denied Dr. Johnstone, the jewel of priority, in comparing the uterine mucous membrane to adenoid tissue and the utricular glands to the glands of Lieberkühn of the intestines, belongs to Henle and Spiegelberg respectively. But Dr. Johnstone went one step further by boldly grasping the whole of the facts and stating that the corporeal endometrium is not mucous membrane at all, but simply and solely adenoid tissue.

After all it is not so much the question of originality or priority that concerns us most. What we wish to know is: Is it true that what was hitherto considered mucous membrane is, indeed, nothing but adenoid tissue? There is nothing that I have been able to find (and I have tried hard) which will disprove Johnstone's assertion, and the more we reflect and reason upon it the more apt we are to conclude that he is right; because, if true, it will successfully explain certain hitherto obscure phenomena in the history, anatomy, and physiology of menstruation, impregnation, and the development of the ovum and embryo. My own knowledge of the corporeal endometrium has been secured from reading and studying the work of others, and a faithful, diligent comparison compels me to accept, without reserve, Dr. Johnstone's work and conclusions as the most logical and best in every way.

Up to this time, then, the structure lining the uterine cavity was invariably described as a mucous membrane, with this distinction: “being thicker than any other mucous membrane because of the greater amount of cortical substance

and its highly developed mucosa muscularis." It is simple enough to conclude that this provision on the part of Nature was for the purpose of favoring a quick and ready attachment for the fecundated ovum and the rapid and successful development of the placenta. But were this simply a more highly developed mucous membrane, why and how could there be a periodic flow of blood from its surface without a trace of direct injury to its integrity or the establishment, in due time, of actual disease in consequence of this repeated and often long-continued menstrual hemorrhage to which the great majority of healthy women are subjected? Strictly speaking, disease of the cavity of the womb is, after all, not so *very* common as is ordinarily supposed; and when disease in this region does exist, we look to other causes, not to menstruation, as an explanation for its presence. From what other mucous membrane of the human body could we have a similar, regularly recurrent loss of blood without an early supervision of actual pathological changes and serious disturbance of the general health? From none. On the contrary, we find that when bleeding from any mucous surface does occur repeatedly, and to the extent in quantity characteristic of the menstrual flow, it is always a cause of alarm, and all means are employed to arrest the same as quickly and promptly as the circumstances will permit.

Williams' theory, that at every catamenial period the entire mucous membrane is thrown off, is no longer tenable (if it ever has been); for were it true, there would be no mucous membrane but cicatricial tissue left after the first menstruation. His investigations, conclusions, and theories have been proved faulty by the observations and researches of Engelmann, Kundrat, Tait, Johnstone, Sutton, Loewenthal, Ercolani, and many more. These authors are unanimous that the epithelial lining of the corporeal cavity alone is thrown off at each menstrual epoch. Just how this takes place has not been fully determined; but this is certain, that at the moment the separation is complete (be it in a perfect cast or piecemeal) a new epithelial coat already exists, and the cavity presents the appearance of a healthy, undisturbed condition immediately after the flow has ceased.

To accomplish so complicated a process as that of men-

struation with the degree of safety usually observed, requires the presence, it would seem, of tissue-forming elements, and that means adenoid or cytogenic structure. Again, how can the placenta form and grow without its presence? And, indeed, it needs no great stretch of the imagination to recognize the fact that the adenoid tissue is the most favorable soil for the reproductive function of the female organism. This, too, is probably another reason why ectopic pregnancy is not more common, because of the comparatively small amount of adenoid tissue in the tubes, in the first place, and the great absorbing power and still lesser quantity of adenoid tissue within the peritoneum. Thus the current is resistlessly toward the views of extra-uterine pregnancy entertained by Lawson Tait. If future investigations confirm the results of Dr. Johnstone's labor (and it appears highly probable that they will), Tait's observations, and his interpretation of them in reference to menstruation, ovulation, and ectopic gestation, will have to be accepted whether we will or not.

2. *The Source, Quality, and Purpose of the Menstrual Flow.*—There is no doubt that the site of the flow is in the endometrium of the cavity of the uterus. The tubal, cervical, and vaginal mucous surfaces do not participate in furnishing blood, except, perhaps, when in a diseased state, or by vicarious action when the hemorrhage may issue from any mucous surface of the body. "The endometrium is richly supplied with arteries derived from the parenchyma. They run along the utricular glands in such a manner as to completely encircle the same by capillaries. They form immediately underneath the epithelial coat an irregular network of wide vessels from which the valveless veins originate, to collect in turn in the uterine and pampiniform plexuses" (Spiegelberg). Martin says that shortly before menstruation the endometrium grows very fast, becomes five to six times its original thickness; the lymph channels widen, the glands become longer and wider, forming a thick cushion filling up the uterine cavity. Next the blood vessels become engorged, and either some of them burst and extravasation occurs, or many red blood corpuscles bore their way (diapedesis) through the walls of the capillaries. Tarnier (Cazeaux) thinks the hemorrhage is of venous origin, because the

ramuscles become greatly enlarged during gestation, when it is ascertained that they belong to the venous system. He admits, however, that arterial blood is mixed with it. Johnstone maintains that menstruation is to the uterus what the lymph stream is to the lymph glands or the blood current to the spleen, and the cause of its appearance externally is due to the almost total absence of lymph vessels and the upright postures. He is further of the opinion that menstruation is nothing more than a cleaning process necessary to successful impregnation. The distinguished Heidelberg obstetrician, Prof. Naegele, taught that after each menstruation an ovum finds its way into the newly prepared cavity of the womb. An attachment readily occurs, and, if impregnated, development of the ovum goes on; but if the ovum fails to be fertilized, it remains for a certain time *in situ*, when it dies and is then thrown off together with the decidua membrane formed. The whole process requires four weeks, commencing with the arrival and fixation of the ovum in the cavity, then gradual death for want of fecundation, and, lastly, emptying of the cavity, attended with loss of blood, the menstrual flow. This tallies with the universal observation that conception is most apt to occur immediately after the cessation of the menstrual flow.

The physical character of the menstrual blood is now known to be identical with that drawn from a vein and artery, mixed with débris of broken-down tissue from the epithelial lining of the body cavity of the womb and the natural uterine and vaginal secretions. In the commencement—the stage of congestion—only an increase of the natural discharge from the uterus and vagina is noticed; later, in the second stage, it becomes gradually mixed with blood until it appears to be blood alone; in the third stage the flow terminates conversely as it commenced, gradually lessening in color and quantity, until at the end it is unstained and reduced to the normal secretions of the parts. Coagulation is prevented by the acid vaginal secretion, and it is only when this is scant or the menstrual flow very profuse that coagula are observed. According to Virchow, the peculiar odor of the flow is due to the presence of fatty acids. Cazeaux and Tarnier have compared it to that of marigold.

3. *What is the Relation between Menstruation and Ovulation?*—In Cazeaux and Tarnier we find it stated that menstruation is caused by the successive evolution of the Graafian vesicles, and in support of this offer the explanations and admirable labors of Negier, Coste, Pouchet, Raciborsky, Robert Lee, and Bischoff. When we read the testimony furnished by the latter, it may appear satisfactory enough to the casual reader. Collectively they claim:

1. No instance is known in which a post-mortem in a woman dying during menstruation has failed to reveal a Graafian vesicle in a greater or less degree of development, or one which had already ruptured.

2. The absence of the ovaries involves of necessity the absence of menstruation.

3. Female animals deprived of the ovaries never go into heat.

4. Heat means ovulation in the lower animals, and ovulation means (with rare exceptions) menstruation in the human female.

Hence, without ovaries no ovulation; without ovulation no menstruation.

Coste and Tarnier, however, admit that in certain instances the Graafian vesicle matures, ruptures, and possibly fulfils its function without the occurrence of menstruation; on the other hand, they believe that a woman may menstruate, but the Graafian vesicle is suddenly arrested in its final development and never ruptures; again, the Graafian vesicle may ripen, rupture, and be discharged, but the woman does not menstruate. Charpentier confirms Coste and Tarnier by quoting the testimony of Giraudet, De Tours, Biegel, Mundé, and De Sinéty; and, in speaking of Ashwell's and Paget's cases, he adds the experience and observations of Kolliker, Girwood, Coste, Goddard, and Gubler, all of whom confirm or favor the opinion that ovulation is independent of menstruation. Martin says: "There is a secondary acquired but not a primary or necessary connection between ovulation and menstruation." He also cites Oldham's cases of ovarian hernia, and Verdier's report of a similar case, both of which would lead us to infer that the ovum was discharged from the ovary at the end of the menstrual period. Hyrtl, in a case

where death occurred three days after menstruation, found an ovum at the uterine extremity of the Fallopian tube. Bischoff observed thirteen cases of death during menstruation, and concludes that the time relationship between the bursting of the Graafian vesicle and menstruation is subject to considerable variation. His and Reichert hold that ovulation normally occurs before menstruation, and that the swollen mucous membrane before the menstrual flux is the most favorable to nourishing the fecundated ovum. Pflueger and Loewenthal agree with Naegele and Johnstone, namely, that the object of menstruation is to prepare a clean and healthy surface for the reception of the ovum. Prof. Kebler, of Cincinnati, related a case to me recently in which he found a fully developed Graafian vesicle post mortem upon a woman who was in the middle of the intermenstrual period; and I have observed similar conditions while assisting others in the removal of ovarian cysts and of the ovaries, as well as in operations performed by myself.

But by far the most important conclusive facts and arguments in opposition to the ovular theory of menstruation we find in Tait's "Diseases of Women and Abdominal Surgery," in the chapter on menstruation. There we see the supporters of both theories arrayed against each other. He gives to both the most impartial and liberal consideration, then adds his own experience in his operative abdominal work, and by a series of clear and well-defined facts and figures concludes, beyond contradiction I believe, that the functions of the ovaries and uterus are separate and distinct. In his narration of forty-nine cases operated upon for cirrhotic ovaries, removal of the appendages for persistent pain, parovarian cystomata, uterine myomata, hydro-salpinx, and menstrual epilepsy, he shows that the ovular theory of menstruation is without proof. In these cases the operation was performed in the middle of the intermenstrual period, and shortly before, during, and immediately after menstruation. In nine of these cases it was evident that menstruation and ovulation were concurrent. In fifteen he found negative proof, and in twenty-five positive evidence, against the ovulation theory of menstruation. To this he adds the evidence he secured from Ritchie, Kesteven, Hirsch, Slawjanski, De Sinéty, Reeves Jackson, Bland Sut-

ton, and Johnstone. In speaking of Miss Annie E. Clark's record of examination of twenty-eight specimens removed by himself and divided into three groups, he says: "The first (three cases) show that menstruation and ovulation are concurrent; the second (seventeen cases) that ovulation is continually progressing and not coincident with menstruation; and the third (eight cases) doubtful, because it was impossible to see what their relations were; but putting on its trial the ovulation theory of menstruation, in these doubtful cases they must be regarded as evidence against it, because it is clearly evident, where any evidence exists, that as no inherent testimony supports the doctrine, it must be considered as testimony subverting it." Speaking of the essential factors necessary for fecundation, Tait says: "They are (*a*) ovulation, (*b*) tubal transmission of the ovum, (*c*) preparation of the uterine mucous surface for the retention, its early nutrition, and subsequent formation of the placenta. The occurrence of the last is periodic and rhythmic. The second is probably concurrent with menstruation. Of the third we know little or nothing, save that it is not concurrent with menstruation. The whole process is, therefore, like a time lock, three discs travelling around the axis on different axes, at different speeds. An aperture exists in each through which the key may be passed, and a time must come, if the machinery is in working order, when the three slots will be superimposed and the lock opened. It is fortunately ordained that this does not occur every month, and unfortunately the machinery is liable to horrible disorder." This is putting things in a "nutshell"—plain, perfect, sound, and simple.

A great deal of confusion has been created by the theory that menstruation in the human female and the rut of the lower animals are analogous. I have entertained this view for many years, because so taught, and most of my reading rather confirmed my belief. But it is with this theory as it is with the ovular theory of menstruation: upon thoughtful reflection and inquiry we find it to consist of more faith than facts. It is, indeed, surprising how men have spent years of time in quest of proof of this theory, when it is plainly evident and easily proved that there is no similarity between the

two. The error occurred because of the belief that ovulation in the human female meant menstruation, and *vice versa*. In the period of "rut" we know that ovulation supervenes in the lower animal, because it is at this period that "she" seeks and admits the "male," and, if the "machinery" is in order, becomes pregnant. This is not so in the human female. When she menstruates the male is avoided and she will not submit except by brute force.

I have not been able to find satisfactory evidence as to whether there exists a period of estrum in the human female. Some authors claim that it is always present in the intermenstrual period; the opinion of Bischoff, Haller, and Litzman is that a period of special desire is apt to immediately follow menstruation (Martin).

413 ELM STREET.

PUERPERAL ECLAMPSIA.¹

BY

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IN most cases of puerperal eclampsia, albumin to some extent is found in the urine, though occasionally cases are seen in which very little or none can be detected. These cases are of the hysterical or epileptic variety, usually the former. If albumin is detected, the inference is that urea is retained in the blood; that there is a condition of uremia, generally, it is supposed, in relatively the same proportion. This inference, while probably correct, is certainly not always true. There may be marked albuminuria and but little uremia, or *vice versa*. These facts explain, in part at least, why we do not always have convulsions, even when we have decided albuminuria. Besides, every one recognizes a greatly varying susceptibility to convulsive action in all women. It is not improbable that the excretion of urea in pregnancy is always

¹ Read before the Obstetrical Society of Cincinnati, February 12th, 1891.

diminished, relatively if not absolutely, but *increased* after parturition.

Uremia is not simply a poisoning of the blood by urea, but it is an alteration of the quality of the blood, caused by a retention of the products of disintegration which normally should be eliminated by the kidneys. The relation of *acetoneuria* to eclampsia is uncertain, but possibly very important.

The objections to the uremic theory of puerperal convulsions—1st, the existence of these convulsions, with death following in consequence, and no disease of the kidneys; and, 2d, a total suppression of urine from pressure on the ureters or from cancer, in which no convulsions result—strengthen the opinion that albuminuria and uremia are not always co-existent and relatively equally present, and corroborate the statement that no explanation of eclampsia has been fully established, and that the disease has more than one cause. Most cases are unquestionably due to uremia produced from a direct pressure upon the renal circulation—a pressure more frequently and potently manifested in primiparæ. Other causes operate with this class of patients, and tend to make this disease, as it is, about three times more frequent with them than with multiparæ. But as it is present sometimes as early as the sixth week of gestation, or weeks after parturition, it must be due to causes besides pressure, viz., reflex action from the uterus on the arterioles of the kidney.

A case recently came into my service at the Cincinnati Hospital which illustrates what I have regarded as the improved method of treatment of puerperal eclampsia.

On the morning of February 8th, at about 8 o'clock, a primipara was brought to the obstetric ward. She had had two convulsions before she was removed from her home, a third on her way to the hospital, and the fourth in the waiting room before she could be received in the lying-in room. At first a cathartic of calomel ten grains, bicarbonate of sodium ten grains, and croton oil 1 drop, was given; then a hypodermic injection with morphia one-half grain was administered, and the patient immediately enveloped in a hot pack and kept there for one hour. A very small quantity of urine, obtained by catheterization, showed albumin, probably about four per cent. Cold was applied to the head, and the Norwood's

tincture of *veratrum viride*, in from five- to ten-drop doses, increased to thirty drops if well borne, was directed to be given hourly. The pulse first descended from 120-130 to 90 per minute, then to 60 per minute, where it was steadily kept, during which time it became more full and strong. The os uteri was, at 8 A.M., dilated to about the size of a silver quarter-dollar; at 12 M. it was about the size of a dollar. During these four hours nine additional convulsions ensued, each becoming more and more apoplectic. There was no consciousness during any of this time. There were thirteen convulsions, all told. No means were taken to facilitate labor, save the employment of copious hot-water vaginal irrigation containing the bichloride 1 : 4,000. As labor plainly was progressing, though slowly, by the aid of uterine contractions, unaided by the voluntary accessory powers, and as no convulsions occurred after 12 M. (some six hours before its completion), it was purposely allowed to take its normal course. A large, healthy, live child was delivered about 6 P.M., the perineum being slightly torn, consequently stitched with silk. The fetal heart sound could be heard at 8 A.M., but it was feeble and very frequent. After the completion of the third stage of labor, the patient was given only the bromide of potassium in solution once in three hours for the night. No further convulsions supervened. The next morning, consciousness partially returning, the bromide was given less frequently, and the patient was encouraged to drink Silurian water freely during the day. The next day, consciousness completely returning, she commenced nursing at the breast her own child, and was directed to stop the bromide, to continue the Silurian water, and to commence the use of muriated tincture of iron in fifteen-drop doses three times a day. On each succeeding day the urine was physically and chemically examined, and the quantity of contained albumin found to be constantly diminishing. On the fourth day, only a trace could be detected. The lying-in state was absolutely normal in all regards. Chloroform was at no time administered.

As most cases of puerperal eclampsia are associated with albuminuria or uremia as cause (possibly it may be at times as a result), it seems prudent that all cases, unless possibly purely hysterical, should have the hot pack administered to

stimulate to the utmost the diaphoretic, eliminative action of the skin, compensatory, as it is, of the diminished or suppressed nephritic action. Its use implies an attack upon the main underlying cause of the disease, not on the symptoms only. With pilocarpine I have had no personal experience, except in the albuminuria of the non-pregnant state.

Veratrum viride relaxes the system, reduces arterial tension, and has largely superseded venesection. I am not as yet prepared to say that it should completely supersede it, but such German authorities as Carl and Gustav Braun, Schroeder, Winkel, and Spaeth have almost entirely rejected venesection. *Veratrum viride* is well borne in large doses, even hypodermatically administered, and any resulting vomiting is plainly self-protective in its action.

Morphia hypodermatically, too, is most excellently borne in very large doses. It is most potent in arresting the convulsive action—a symptomatic relief, it is true, but it is to be remembered that each additional convulsive action not only materially bespeaks the growing gravity of the situation, but directly adds to the structural changes developing in the brain. Reference has been made to cathartics. The chief underlying principles of treatment seem now to be to stimulate active, compensatory elimination of the bowels and skin, and then, in due time, to favor nephritic action. The symptoms—convulsive actions—are combated by *veratrum* and *morphia*, which always assist each other.

Puerperal eclampsia, treated in this way, ought to have, to my mind, a mortality considerably less than thirty per cent.

ALBUMINURIA IN PREGNANCY.¹

BY

W. H. WENNING, M.D.,
Cincinnati, O.

THE relationship between albuminuria, as indicative of kidney derangement, and puerperal eclampsia is so well

¹ Read before the Obstetrical Society of Cincinnati, February 12th, 1891.

recognized that, for the most part, we are justified in assuming that the convulsions met with in the pregnant or puerperal state are uremic in character. It is true that in some instances they may occur in the absence of the usual symptoms of nephritis, but they are then uncommon; on the other hand, grave forms of Bright's disease are so uniformly followed by eclamptic symptoms that unmistakable evidences of the former will point almost positively to the latter. It is to be well understood, however, that the simple presence of albumin in the urine of the pregnant woman is by no means indicative of constantaneous pathological changes in the kidneys, but may be only transitory and hence not followed by the much-feared eclamptic symptoms. Only when we find the other well-known symptoms of Bright's disease, whether they have preceded the pregnant state or are directly dependent or engrafted upon it, are we justified in looking forward to the sudden outbreak of eclampsia.

* A few years ago I reported to this Society a case of Bright's disease of a grave character; it came under my notice in the latter months of pregnancy, and consequently alarmed me not a little as to the ultimate outcome of the case. This patient was a young primipara, who was markedly anemic and markedly edematous all over the body, but especially from the waist downward. The urine was loaded with albumin up to the end of pregnancy; there were symptoms of headache and great dyspnea, and above all a history of nephritis consequent upon a severe attack of scarlatina during girlhood. This patient was placed at once upon diuretics, diaphoretics, and saline cathartics, which caused an improvement, but not a complete abatement of the symptoms until the advent of labor; this, though rather tedious and difficult, was not attended with, or followed by, any sign of convulsions.

As a further contribution to this subject I desire to report the following case which has recently come under my observation:

In the beginning of the present year I was engaged to attend a young woman in her first confinement. As is my usual custom, I visited her as soon as practicable, which was January 14th. She informed me that she had last menstruated about May 3d, 1890, and consequently expected to

be confined about February 3d, 1891. She was 29 years of age, and said she had been in most excellent health up to about November, when her limbs began to swell. Even this she looked upon as a necessary consequence of her pregnant condition, and hence attributed no importance to it. By this time, however, the edema had increased to such a degree that her limbs had truly elephantine proportions. She walked with the greatest difficulty, widely separating her limbs owing to the great swelling of the vulva. She had difficult breathing, but no epigastric pain and no headache; in short, had no idea of any impending danger. Finding the urine loaded with albumin, I ordered the patient to bed, and began the hot wet-pack treatment, at first daily, and finally, as she began to demur owing to its alleged weakening effect, every other day, alternating with hot poultices in the region of the kidneys. In addition to this she was given large quantities of cream of tartar in lemonade, besides citrate or acetate of potash in an infusion of jaborandi or digitalis. The digitalis was substituted for the jaborandi whenever the heart's action became feeble. This had the desired effect of greatly relieving the dropsy, although the albumin diminished but slowly in quantity.

On February 1st she began to complain of labor-like pains, which were very severe and came on at short intervals. The head of the child was well down in the pelvis, but the cervix undilated. Besides free purgation I ordered chloral hydrate, gr. xv., to be given every twenty to thirty minutes until the pains became mitigated. This had the effect of prolonging the intervals, so that in the next twelve hours there was but little change. On the night of February 2d I was again summoned with the statement that now her labor pains were much more severe and the waters had broken. On examination, however, I found but very little dilatation of the os, and the bag of membranes apparently intact. As she now complained of severe headache, I gave the hydrate of chloral more freely. During the forenoon of February 3d I was hastily summoned by the nurse, who stated that the patient acted rather queer and seemed to show slight twitchings of the face. A close inspection instituted by me upon my arrival detected no distortion of the face, and no aberration of mind beyond a consid-

erable drowsiness, which was attributed to the chloral, of which she had taken two drachms in six hours. Her pulse, however, which had been normal, was now 120, with no marked elevation of temperature. Five-drop doses of tincture of veratrum viride were given every half-hour until the pulse was reduced to 80. The os continued slowly to dilate, until in the evening it was the size of a half-dollar. As the patient was now very much exhausted, and it occurred to me that the great distention of the uterus and abdomen might prevent proper uterine contractions, owing possibly to an increased amount of liquor amnii, I ruptured the membranes for the purpose of relieving the tension. A gush of liquor followed, the pains became more active, and dilatation increased. Before complete dilatation, however, uterine inertia set in, and I delivered the woman, with the forceps, of a living male child weighing seven and a half pounds. Shortly after pains unusual in severity again occurred, and on examination a second fetus was discovered, which also had to be delivered by the forceps, when the head descended to the floor of the perineum, owing to the sudden cessation of pains. This child, also a male, gasped a few times after birth, but then ceased to breathe, although all the various methods of resuscitation were tried. It was well formed, and weighed five and a quarter pounds. Each child was in a separate amniotic sac and had its own placenta, that of the first child being normal in size, whilst the afterbirth of the second was very small and the cord correspondingly slender.

The mother made a slow recovery, in due time attained the usual lacteal secretion, and regained her appetite, which, in fact, had been extraordinarily good up to the time of her confinement. A slight rise of pulse and temperature continued throughout the puerperal period, although the subjective symptoms were good. Great diaphoresis continued during the entire period, and the albumin is rapidly diminishing. She is still very anemic, but the edema, which persisted some time after labor, has entirely disappeared. The patient is regularly taking quinine and iron. five grains of the former to thirty drops of the muriated tincture, three times a day.

It may be of interest to add that a sister of this patient had had violent convulsions during her puerperium.

IN MEMORIAM.

BENJAMIN FORDYCE BARKER, M.D., LL.D.

Born May 2d, 1818; Died May 30th, 1891.

ALTHOUGH not entirely unexpected, for it was known to his friends and the majority of the profession that he was in feeble health, the death of Dr. Barker came like a thunderbolt to his many friends and admirers. When the news appeared in the evening papers of May 30th that Fordyce Barker was dead, it is no exaggeration to say that a gloom spread over the whole medical profession of the city of New York—a feeling which extended throughout the whole land and across the ocean as the sad news was promulgated. Not only those who had enjoyed the privilege of Dr. Barker's acquaintance and friendship, but also the many who had met him but casually, felt as though each had lost a dear friend, and as though he himself had been afflicted by a personal calamity.

There surely never was in the city of New York a member of the medical profession who was more popular, and deservedly so, than Fordyce Barker. If he had enemies among the medical profession, they, with rare exceptions, were careful to hide their feeling; and among the laity—that is to say, among the large, wealthy, and influential portion of the community whom he numbered among his patients—his name was a household word, his visit a ray of sunshine.

Dr. Barker understood, with a tact which was never at fault, how to impress his patients with the belief that he was their personal friend as well as medical adviser, and that no case interested him as much as the one which he was at that moment attending. And in conveying this impression Dr. Barker's kindness of heart and sympathetic manner had a large share. It is safe to say that no man ever approached the bedside of a patient who carried with him more of the qualities necessary to gain the confidence of the sufferer and lead him

or her to expect a speedy recovery, than did Dr. Barker. But let it not be inferred that the beneficial results of his visits were due mostly to his personal magnetism and genial words. While not a surgeon—indeed, rarely ever touching the knife—he understood to a marvellous degree the effect of drugs combined with hygiene upon the human system; and the writer of this memoir, while assistant surgeon to Dr. Barker at the New York Woman's Hospital, had many an opportunity to admire and profit by his *medical* treatment of gynecological cases.

As a family practitioner Dr. Barker's position in New York was practically unique. He enjoyed the confidence of the majority of the prominent families of the city, with many of whom he had, as it were, grown up in their rise to affluence and distinction.

As an obstetrician, Dr. Barker, almost up to the time of his death, was more sought for, by those able to pay his fees, than any other accoucheur in the city. Having been in practice in New York for forty years, his experience both in ordinary obstetric cases and as a consulting obstetrician was enormous, and his services were called for in the majority of difficult confinements occurring in high life. In spite of a defect of speech, owing to a partial paralysis of one of his vocal cords, which for over twenty years rendered his voice husky, Dr. Barker was an excellent teacher, a fluent speaker, and as an after-dinner orator second to none in the medical profession during his palmy days. His great fund of anecdote, his personal acquaintance with many prominent men in this country and abroad, his genial humor, and his hearty good-fellowship with all who enlisted his sympathies, rendered a speech from him or an evening spent in his company a treat always to be remembered and treasured up as a pleasant episode in the recollection of the participants. No more genial host than Fordyce Barker has, within the memory of the writer, figured in New York society. He had a faculty of making his guests feel at home, at peace with themselves and each other, and his dinners and receptions were so popular that on the latter occasions his hospitable home was invariably crowded by the élite of the profession. His generosity was unbounded, and his check book always at the service of professional enterprises

and needy fellow-practitioners. Truly, Fordyce Barker was one of Nature's gentlemen and a Prince among men !

Born in Wilton, Maine, and graduated at Bowdoin College, he visited Edinburgh and Paris, receiving the degree of Doctor of Medicine at the latter university in 1841. He first began practice in Norwich, Conn., was made professor of midwifery in Bowdoin Medical College in 1845, and professor of the same branch and the diseases of women at the New York Medical College in 1850, when he removed to this city.

In 1852 he became obstetric physician to Bellevue Hospital, and in 1860 professor of clinical midwifery and diseases of women in Bellevue Hospital Medical College, which positions he held for many years until increasing cares and years obliged him to relinquish them.

Dr. Barker was consulting physician to Bellevue Hospital, the Nursery and Child's Hospital, St. Elizabeth's Hospital, the Cancer Hospital, and for several years surgeon to the Woman's Hospital. He was a member of many medical associations, notably the New York Academy of Medicine, of which he was president from 1878 to 1884; the New York County Medical Society, the New York Obstetrical Society, the New York Pathological Society, the New York Medical and Surgical Society; the Medical Society of the State of New York, of which he was formerly president; and the American Gynecological Society, of which he was the first president in 1876. He was also Honorary Fellow of the Royal Medical Society of Athens and of the obstetrical societies of Edinburgh, London, Philadelphia, and Louisville, and of the Philadelphia College of Physicians. In 1886 the University of Edinburgh conferred upon him the degree of LL.D., which he had already received from Bowdoin and Columbia Colleges. He contributed to medical literature many lectures and papers, and was the author of a standard work on puerperal diseases, which was published in 1874, and was translated into Italian, French, German, and Spanish. He was also the author of a treatise on seasickness.

It was Dr. Barker's habit for many years to spend his summers abroad, where he made the acquaintance not only of the leading members of the medical profession, chiefly in England and France, but also of many literary, social, and artistic

celebrities, such as Dickens, Thackeray, Christine Nilsson, who, on visiting this country, were his friends and patients. His parlors, waiting and consulting rooms were filled with mementoes of these and many other distinguished people, and his house was in a measure a rendezvous for eminent foreigners, who will miss by his death the opportunity to meet kindred spirits on this side of the Atlantic.

Time will show who will prove himself willing and able to take Dr. Barker's place. The writer cannot close this imperfect sketch without referring to the personal obligation which he bears to the memory of his lamented friend. When a young, struggling practitioner, seeking to establish himself in this city with a view of eventually becoming a specialist, and when the road seemed steep and narrow, and success at the best doubtful, Dr. Barker was among the first to lend a helping hand by offering the writer the position as assistant surgeon on his service at the Woman's Hospital, to which he (Dr. Barker) had just been appointed to succeed Dr. J. Marion Sims. For this act of friendly kindness the writer can never sufficiently express his thanks.

Although not connected with Dr. Barker in private practice, the writer has never ceased to entertain for his former chief the sentiments of unbounded respect and admiration which were inspired by the kindly act referred to and maintained by many subsequent evidences of friendship and good-feeling. This memoir is but a slight tribute of the author's affection for his old friend and teacher.

PAUL F. MUNDÉ.

RESOLUTIONS OF THE NEW YORK OBSTETRICAL SOCIETY ON THE
DEATH OF DR. FORDYCE BARKER.

Resolved, That by the death of Dr. Fordyce Barker the New York Obstetrical Society has sustained the loss of its oldest and most eminent Honorary Fellow, who, though prevented in recent years, by reason of his failing health, from taking an active part in its scientific work, always maintained a lively interest in its proceedings and rejoiced in its prosperity.



Kind regards of
George Barker

Resolved, That the Fellows of this Society, recalling his numerous acts of kindness toward them individually, feel that when his great, warm heart ceased to beat they lost not only one who was the finest type of professional honor and dignity, but a long-tried personal friend.

Resolved, That they will cherish his memory as that of a wise physician and a chivalrous, high-toned gentleman, whose name will ever remain a synonym for all that is noblest and best in our profession.

Resolved, That they respectfully tender to the family of the deceased their sincere sympathy, and that copies of these resolutions be sent to them and published in the various medical journals.

For the Society,

THOMAS ADDIS EMMET, M.D.

WILLIAM M. POLK, M.D.

JOSEPH E. JANVRIN, M.D.

HENRY C. COE, M.D.

THE MEDICAL BOARD OF THE NEW YORK MATERNITY HOSPITAL adopted the following resolution:

Resolved, That by the death of Dr. Fordyce Barker, consulting surgeon to the Hospital, we have met with the loss of a warm personal friend as well as of a valued counsellor. Although unable, by reason of increasing infirmities, to take an active part in the work of the Hospital, his interest in its welfare and in the branch of medicine in which he was so eminent never abated. In common with the whole profession, we cherish his memory as that of a wise physician and a good man, who died full of years and honors.

By the Board,

HENRY C. COE, M.D.,

Secretary.

At a meeting of the MEDICAL BOARD OF BELLEVUE HOSPITAL, held June 1st, 1891, the following resolutions were adopted:

Resolved, That it is with the deepest sentiments of regret that this Board has learned of the death of Fordyce Barker, M.D., LL.D., who has been identified for so many years with

the medical staff of this Hospital as one of its most distinguished and deservedly esteemed members ; that his removal at this time is felt by his colleagues as a special loss to this institution.

Resolved, That in Dr. Barker his colleagues have always recognized a man of exceptional endowments, both of mind and education, which made him the ornament and pride of medicine, which caused him to be an example in these respects to all his fellows.

Resolved, That the thirty-five years spent in ministering to the sick in this Hospital with the faithfulness to that duty which characterized Dr. Barker, is of itself a testimony to the worth of the life which is now closed. But, in addition to this, Dr. Barker used the opportunities of his connection with this Hospital to teach others by his experience, by his wide knowledge, by his exceptional skill, and by his great literary gifts, to an extent which has been widely appreciated by the whole medical profession in America and abroad.

GEORGE WOOLSEY, M.D.,
Secretary Medical Board.

CORRESPONDENCE.

THE VAGINAL OPERATION FOR SHORTENING THE UTERO-SACRAL LIGAMENTS.

TO THE EDITOR OF THE AMERICAN JOURNAL OF OBSTETRICS, ETC.

DEAR SIR:—In an able article contributed by Dr. C. E. Herrick, of Grand Rapids, Mich., to your esteemed journal, and entitled “An Operation for Shortening the Utero-sacral Ligaments,” originality is claimed by him for an operation described by me in 1888 in Byford’s “Diseases of Women,” on pages 526 to 528.

He says : “Both Frommel and the late Professor Byford

suggested shortening these ligaments, . . . but both operators first opened the abdomen, etc.”

If you will allow the space, I would like to present the following quotations side by side, the first from Byford's "Diseases of Women," which was in the hands of the printer by October, 1887, and the second from Dr. Herrick's article in the March, 1891, number of your journal. I have italicized the expressions found in both descriptions.

With a small pair of tenaculum forceps I drew the cervix forward until I could feel the somewhat tense sacro-uterine ligaments by a finger of the other hand. . . . I used (1) *a long heavy needle slightly curved*. Some difficulty was experienced, for the needle point had to be introduced into the (2) *vaginal covering of the cervix* just below the attachment of one of the ligaments, (3) *carried up to the ligament and backward along the ligament (as felt upon the finger) into the back part of the pelvis*. . . . So far I have merely tied the stitch about the puckered vaginal wall that is included. Had I not done them as secondary . . . I should have (4) *excised a fold of vaginal wall* between the entrance and exit of the needle. Before the needle is pulled through, an assistant should (5) *introduce the finger into the rectum for the purpose of making sure that the needle has not punctured it*.

Some few months past . . . this led me to attempt the modification of post-cervical adhesion as an operation, by shortening the posterior ligaments without opening the abdomen. . . . The (4) *posterior portion of the uterine neck is denuded* . . . then the cul-de-sac of Douglas is in turn denuded to correspond. . . . The first suture should be introduced through the (2) *membrane of the cervix*, with a (1) *curved needle of as great length* as can be used through the speculum; then it should be carried high up through the wall of the cul-de-sac and as close to the uterus as possible, (3) *when the operator will distinctly feel the needle pierce the utero-sacral ligament; then he should carry the needle well back* and as close to the rectum as possible. . . . Before the deep suture is taken the operator should (5) *pass the finger into the rectum*. . . . While introducing the deep suture he should keep the (5) *finger in the rectum as a guide to avoid puncturing it*.

Other similarities of a less striking nature occur, as they would naturally in two descriptions of the same operation.

I cannot see where the originality of his procedure lies, except that while I merely *suggested* a post-cervical excision of vaginal wall, he started out with a denudation as one of the principal steps. I agree, however, that such denudation should always be carried out, for although I have taken up all of the ligaments that I could in my sutures, I confess that I have been disappointed in the results. The abdominal

pressure exerted upon the uterus has partly undone the good of the operation. In fact, it is just because the sacro-uterine ligaments hold the cervix up against abdominal pressure that the method is somewhat irrational. The means are not adequate to the end. Alexander's operation might be said to be more rational, because by it the uterus is so placed that abdominal pressure assists rather than antagonizes the shortened ligaments in holding the uterus in its new position.

I therefore think that the denudation is an important auxiliary part of the operation, for by it not only the sacro-uterine folds but the post-cervical connective tissue can be drawn together, and thus be made to render more firm resistance. Instead of denuding only the posterior wall of the cervix, however, I would suggest denuding the lateral vaginal fornices, and placing the sutures so as to draw the bases of the broad ligaments back toward the sacro-uterine, and thus get the aid of the lateral as well as posterior connective tissue, by which alone we can hope to fix the cervix back as it is in normal anteversion. Then the bases of the broad ligaments will work together with the sacro-uterine.

The opening of the peritoneal cavity is spoken of later as a possible modification of this procedure, and in connection with another method of operating.

Very truly yours,

HENRY T. BYFORD.

CHICAGO, June 17th, 1891.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, April 21st, 1891.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

PERIMETRITIS FOLLOWING PERITYPHLITIS.

DR. H. J. BOLDT related the following case: About three weeks ago he had been called to see a case in consultation in which he had performed some plastic operation a number of months before, the patient having completely recovered from

the operation. She had been in good health to within a week of the time he saw her. Her symptoms began with pain in the ileo-cecal region, the pain remaining stationary a few days, then radiating over the abdomen. He felt a distinct tumor at the cecum, made a diagnosis of appendicitis, but did not advise an operation. The patient did well under the expectant plan of treatment, cold applications, and rest. He saw her again two days ago. She had apparently recovered from the attack of appendicitis, but still had some pain in that region. It had also extended gradually downward on the right side, toward the back and hypogastrium. Examination revealed a mass crowding the uterus forward and upward, the mass lying posteriorly and on the right, and continuous with the uterus. It seemed evident that inflammation had extended from the cellular tissue around the vermiform appendix to that about the uterus, setting up a perimetritis. There was no other cause for the perimetritis except the appendicitis. While perimetritis was known to occur occasionally, he had seen no other case in which he had been able to trace it so clearly to appendicitis.

DR. GRANDIN asked whether ovarian and tubal disease could be excluded as the cause of the perimetritis.

DR. BOLDT replied that the pains had been confined entirely to the ileo-cecal region; there alone a mass could be felt, while the uterus and its appendages had been movable. Moreover, not long before the attack of appendicitis he had had occasion to examine the patient, and the pelvic organs were then normal.

He added that no operation had been performed, but the patient was then in the hospital, and if an abscess should form it would be opened.

HYPEREMESIS GRAVIDARUM.

DR. J. R. GOFFE related a case of obstinate vomiting of pregnancy in which it was necessary to induce miscarriage. It occurred in a woman who had been pregnant six years before, who then had obstinate vomiting and became so reduced in flesh and strength that it was necessary to bring on abortion at about the third month. Septicemia followed, and she was confined in bed for six or seven weeks. This occurred while she was in Boston.

In her recent and second pregnancy nausea began almost immediately with the cessation of menstruation, and had become so severe before the end of the first month that she was unable to retain anything in the stomach. At the second month Dr. Goffe gave instructions that she remain in bed, and, after trying various medicinal agents, put her upon

nutritive enemata. Among the agents tried were oxalate of cerium, bismuth, cocaine both locally and by the stomach, applications of pure carbolic acid to the cervix, cotton tampon with glycerin. The local applications succeeded in softening the cervix, which had been very hard. There was no flexure of the uterus. The vomiting continued, and after the patient had been in bed four weeks, and had become exceedingly restless and sleepless, he finally decided to induce a miscarriage.

Ether was given, and the cervix was opened with the steel dilator. The internal os was tough, like gristle. He succeeded, in twenty or thirty minutes, in so far dilating the cervix as to be able to introduce an instrument and pass it around the cavity, between the fetus and uterine wall. The after-treatment consisted in washing out with bichloride solution, and in packing the uterus with iodoform gauze, the end of which projected from the vulva. The nausea and vomiting ceased almost immediately; there had been no rise of temperature; the patient had made a perfect recovery. The third day about eight inches of the gauze, which had been soiled, was pulled out and cut off; the same amount was cut off two days later; the next day the remainder was taken out and found in pure condition. There had been scarcely any discharge. He expressed his satisfaction with the use of gauze in these cases.

DR. E. H. GRANDIN remarked that the method of dilatation employed by Dr. Goffe was not the usual one in bringing on abortion, but he thought it was the proper one in hyperemesis gravidarum. In these cases the woman's general condition was so low that the quicker the operation for abortion was accomplished the better. Where the catheter was introduced to the fundus and left to excite uterine contractions, one might have to wait forty-eight hours. He preferred, then, the steel dilator or aseptic tupelo tent, and, after dilating, to introduce a long, dull (not sharp) curette, and remove the fetus at once. He approved of drainage by a strip of gauze, but said it should not be used with an idea of tamponing. The gauze drain would not irritate the uterus, as the glass or hard-rubber stem was liable to do. He would always drain the septic uterus.

Being asked by the author his views of the treatment by dilatation alone, Dr. Grandin said that five weeks ago he had been called in consultation to a case of vomiting of pregnancy in which the attending physician had tried every means, except dilatation, without success. Dr. G. performed dilatation, not with much hope of success, since ordinarily he had found it to fail; but in this instance it proved successful at once.

With regard to drugs, he had lately administered, in three cases of physiological vomiting of pregnancy, a remedy which had given greater success than anything else which he had yet tried. He had given up oxalate of cerium, also cocaine, and had about despaired of helping these patients by means of drugs, until he had happened to read an article in which ingluvin, or the extract of the gizzard of the domestic fowl, had been recommended. In the three cases he had given it in thirty-grain doses, beginning half an hour before the patient rose in the morning, and in all the vomiting had been checked.

DR. CHARLES JEWETT had had considerable satisfaction with cocaine. He would try ingluvin, which had been so successful in Dr. Grandin's hands, but it would probably prove useless in just the class of cases where it would be most needed, namely, cases in which nothing would stay on the stomach. With regard to iodoform gauze, it was doubtless a good method of drainage, but he saw no reason in ordinary cases for the introduction of any kind of drain. The uterus was open, drainage was free, and the gauze, or anything introduced into the cavity, might even favor sepsis rather than prevent it.

DR. CLEMENT CLEVELAND said he had used ingluvin in a good many cases, the first time being over ten years ago, but he had never given it in as large doses as Dr. Grandin had mentioned; nor had he ever obtained as positive results with it, although in a number of cases it had acted satisfactorily. He had given it in doses of five grains before and five after meals.

DR. R. A. MURRAY wished to speak of two points in connection with Dr. Goffe's case. First, the use of the gauze drain. He would like to know why it was used; what was the necessity for it. He had never seen, for instance, severe hemorrhage from a uterus which had been emptied at the third month and a half. The cavity being open, he had seen no necessity for a drain of any kind. He made this statement after having seen as many as a hundred cases where the fetus had been removed or in which miscarriage had taken place spontaneously. He believed the temptation to introduce iodoform gauze into the uterine cavity was altogether too strong and should be resisted. Even in miscarriage toward term, a number of gentlemen had introduced gauze into the uterine cavity when he believed there was no necessity for it. It was more likely to cause sepsis than to prevent it, especially where, as in Dr. Goffe's case, the cavity had already been washed out with bichloride solution, rendered aseptic, and contraction favored. If there was hemorrhage, then something must have been left in the uterus.

The best evidence that the uterus was empty was the fact that bleeding had stopped.

In checking the vomiting of pregnancy, he had had a good deal of success with the oxalate of cerium, combined with codeia given in sufficient amount to obtund sensation. Codeia had succeeded where morphine had failed; and it also had the advantage, he thought, of not checking the secretions of the intestines. In some cases it was necessary to dilate the cervix, and in this class cocaine was of benefit in diminishing the reflex of the cervix.

One should not forget, in cases of obstinate vomiting, to examine for retroversion or retroflexion. This was especially important in pregnancy between the eighth and fourteenth weeks, a period when the displaced uterus might get caught under the promontory of the sacrum. He had seen three cases in which vomiting ceased after raising the uterus to its proper position.

DR. FLORIAN KRUG remarked that as the vomiting of pregnancy was a common occurrence, the difficulty lay in deciding when the vomiting had ceased to be physiological and had become uncontrollable. For instance, the patient might have remained under the care of the family physician until the third or fourth month, being assured that the vomiting would cease after a time, but finally, the usual means failing, she was sent to the gynecologist. Now, in such a case it was extremely difficult for the latter to say at once whether abortion should be brought on or whether less radical measures should be tried yet. He had to confess to one misjudgment in exactly such a case a short time ago. He was of the opinion that the woman was not in such a condition as to demand immediate abortion, and he therefore tried some other means which had not yet been resorted to by the family physician. In that way he lost about a week or ten days before he realized that nothing would prove successful except to induce abortion. It was a little too late, however, and the patient died that night. The pulse suddenly grew weak, the heart failed and would respond to no stimulants, although the uterus was emptied quickly without loss of blood. He thought, after this experience, that one should draw the line more closely in favor of the mother and at the sacrifice of the fetus. As to the manner of inducing abortion, he was decidedly in favor of dilating at once and removing the fetus instead of using tents. He would further avoid even the smallest loss of blood, and was also in favor of perfect drainage. As the packing of the uterine cavity with iodoform gauze would accomplish these two objects in a perfect manner, he would strongly advocate this measure, and could see no objection to using it in these cases.

DR. A. M. JACOBUS had used with some degree of success in the early months of pregnancy, when the nausea and vomiting were largely reflex or sympathetic, nearly all the remedies which had been mentioned, including local applications to, and dilatation of, the cervix uteri. But in cases in which later there had developed a chronic catarrh of the stomach and the patient could scarcely digest or retain anything in consequence, he had obtained excellent results from the internal use of the *oxide* of silver. About a quarter to one-half of a grain, in conjunction with a bitter extract—gentian or *nux vomica*—should be administered four times a day on an empty stomach. The books specially mentioned nitrate of silver, but he had found the oxide better tolerated and more serviceable. It acted as a stomachic astringent and probably also as an alterative tonic and nerve.

THE PRESIDENT recalled a case in which, ten or twelve years ago, he had tried oxalate of cerium, codeia, and other remedies without avail; and his attention then being called to an article giving directions for the use of chloral, he made an injection into the rectum, night and morning, of about a scruple of that remedy dissolved in two ounces of milk. Afterward he added a little opium to control irritability of the rectum. This patient, who had had two prior abortions, was able to carry her child to term without further serious trouble. He had used the chloral in several cases since then, but in none of them was the vomiting so severe.

DR. GOFFE said he had used the gauze in this case to stimulate the uterus to contract and to afford good drainage by keeping the cervix open. He thought the ability to tolerate the gauze showed that the vomiting had been due not so much to the presence of the fetus in the uterus as to the condition of the os. He noticed, on removing the fetus, that it had been attached high in the uterus, and it was not unlikely simple dilatation of the os might have relieved the vomiting. But having gone that far, he thought it safer, on account of the condition of the patient, to go on and remove the fetus.

RETROVERTED, ADHERENT PREGNANT UTERUS ; TWO CASES.

DR. CLEMENT CLEVELAND reported two cases of retroverted, adherent pregnant uterus which, he said, were almost identically alike. One of the women came to his office six weeks ago, when he found her about two months pregnant. He had seen her about two years previously, when she gave a history of having had a pelvic inflammation two years before. The treatment then had consisted in packing the vaginal cul-de-sac with cotton several times a week. Having tried

this treatment six months, he put the patient under ether and attempted to force the uterus forward. While he succeeded in carrying it forward to some extent, it fell back again immediately, showing that adhesion had not been broken. The result was that the patient went away in about the same condition she was in when she came. He saw nothing more of her until the time just alluded to, seven weeks ago, when he found the uterus still bound down by adhesions in the posterior position, and about two months pregnant. She was placed in the knee-chest position, and an attempt was made to gently force the uterus up, but failed. He told her it would be necessary later to administer ether, when a more forcible effort would be made to replace the uterus, unless meanwhile it had risen out of the pelvis. A week ago she was placed under ether and Schultze's method was employed for raising the uterus. It proved surprisingly easy work. The adhesions, which had formerly offered such effectual resistance, seemed to have softened with the advancement of pregnancy, and the womb was readily restored to position. A pessary was inserted, and the patient was getting along without difficulty. The other case in which he had employed Schultze's method was in a patient who had come to his office about two weeks ago. She had already passed the third month, and there had already been some loss of blood attended with bearing-down pain. The uterus about filled the pelvic cavity, and probably would not have risen without the assistance of Schultze's method. Ether was given, the patient placed on the back. The thighs were bent over the abdomen, two fingers introduced into the rectum, the thumb into the vagina, the right hand over the abdomen; then by bi-manipulation the uterus was raised out of the pelvic cavity. He had also used the method in the unimpregnated retroverted uterus with adhesions, with partial success, but did not use much force, fearing there was tubal disease.

DR. KRUG said that some time ago Dr. Waldo had read a paper before a section of the Academy of Medicine in which he made the point that peri-uterine adhesions, particularly if posterior and strong enough to fix the uterus under the promontory of the sacrum, would almost invariably cause abortion. At the same time Dr. Krug expressed the opinion that the adhesions themselves were not the cause of the abortion, but attributed this accident to the endometritis which was present in such cases. He still held that view, and thought it was supported by the two cases narrated by Dr. Cleveland.

DR. GRANDIN said he was very glad to hear the report of these cases, for Dr. Cleveland's evidence gave him courage to test a method of which he had always been afraid. He

referred to Schultze's method of forcibly stretching the adhesions. According to the prevailing view these chronic adhesions were due, at least as a rule, to pyo-salpinx or rupture of an ovarian abscess. Thus, we could never feel sure that in tearing up the adhesions we would not rupture a pus sac and set up a general or local peritonitis. He had a number of cases in which the uterus was adherent, and in which he would like to break up the adhesions—cases in which he did not feel himself justified in doing laparotomy, for the simple reason that, although there might be a little pus in the tube or ovary, yet from his point of view it was not sufficient to endanger life, therefore he did not care to subject the women to the possible risk of dying under the knife. From what Dr. Cleveland had said, he thought he would now have sufficient courage to break up the adhesions.

Regarding the adherent gravid uterus, his experience had been the reverse of Dr. Krug's. It was his experience that these women miscarried about the third or fourth month because the uterus was unable to rise above the pelvic brim, the fundus being fixed below the promontory of the sacrum. There was no question but what the adhesions did soften, as all the pelvic viscera softened, during pregnancy, but in his experience the uterus had ordinarily cast off the product of conception. In the next case, if he could not restore the uterus with the patient in the knee-chest position, he would try Schultze's method.

DR. CLEVELAND said it was understood, of course, that the uterus was firmly bound down by adhesions, and that it would have discharged its contents, *because* there was not room for it to go on growing in the pelvic cavity, uterine contractions being excited by pressure of the organ against the pelvic walls. He said Dr. H. D. Nicoll had recently told him of a case in which Dr. Thomas and himself had failed to replace a pregnant uterus, and decided to wait and see what Nature would do. About the fourteenth week the patient sent for Dr. Nicoll because of sudden and severe pain, which, however, had ceased when he arrived. He found the uterus had risen above the promontory, showing that some cases would be relieved without the aid of artificial means.

DR. BOLDT, referring to a remark by Dr. Grandin, said that it was not his experience that the majority of cases of retroversion of the uterus with adhesions had their origin in oozing of pus from the tubes or rupture of an ovarian abscess. Hundreds of cases of retroversion of the uterus with adhesions which had been treated by Schultze's method showed that this could not be true. While formerly he was himself

afraid of causing injury by the manipulations, yet, having become tired of the slower method of treating posterior adhesions by massage, he had later tried Schultze's method in a number of cases and had had no untoward result. Of course it was necessary to exclude disease of the adnexa, which could be done under an anesthetic. In properly selected cases he had found Schultze's method one of the best with which he was acquainted.

DR. H. T. HANKS recalled four cases in which pregnancy had gone to the third and fourth month with the uterus in the retroverted position. In one of them miscarriage took place very soon after treatment had been begun. He thought that in much the larger majority of the cases the uterus could be restored after placing the patient in the knee-chest position and giving chloroform. He thought the probable cause of miscarriage was usually crowding of the uterus in a cavity too small for its growth. It was true there was likely to be some endometritis accompanying the perimetritis and adhesion. He thought much more reliance could be placed upon Nature and the knee-chest position in these cases than was commonly supposed.

DR. CLEVELAND thought it had not been understood that he was speaking of cases of retroversion in which there was no doubt of the firmness of the adhesions and the fact that the uterus could not be restored except as he had described. He had a number of cases of retroversion without adhesion in the pregnant uterus, which were restored without difficulty. He did not believe, however, that the cases which he had just narrated could have been treated successfully except by Schultze's method.

MODIFIED SCISSORS.

DR. CLEVELAND presented two pairs of scissors for use in repairing the lacerated perineum and cervix uteri, being a modification of those already in use, in that the handles were made shorter, which allowed of greater accuracy and ease in their use.

THE PRESIDENT then read the paper of the evening,

A PLEA FOR EXPLORATORY ABDOMINAL SECTION IN THE EARLY STAGES OF TUBAL PREGNANCY.¹

DR. HANKS said it was true that tubal pregnancy, its pathology and treatment, had received a great deal of attention during the past eight years, and he thought all would agree with the author that the ideal method of dealing with it was by laparotomy. But not every one would agree that it

¹ See original article, page 789.

was criminal to defer laparotomy and use electricity. It did not necessitate crippling a woman to destroy the ovum in the tube at the second month. He could point out four women, within eleven blocks of the meeting, in whom the ovum had been destroyed by electricity, but who were then as healthy as any person present. One of them was pregnant at this time. He knew not of a single case in which electricity used at this early stage, before rupture had occurred, had destroyed the life of the woman; on the contrary, it had saved its subjects. He would say, with the author, that the abdominal surgeon would be foolish to resort to electricity if the patient would consent to laparotomy. But what was one to do when, as in two of his cases, the patients would not consent to an operation? He would have been willing to operate in two cases, certainly in the second one, had the patients consented; but, without the operation, they were to-day as healthy as any women in the city.

There was one diagnostic sign mentioned by the author to which sufficient attention had not been given, and which he had not recognized when he prepared his papers which he read before the American Gynecological Society at Washington. He referred to the shape of the uterus. In normal pregnancy the uterus increased in size in the antero-posterior diameter, while in tubal pregnancy the enlargement was more uniform.

He wished to strongly protest against talking down electricity, especially in the practice of the general practitioner, who might not be able to call in an abdominal surgeon. It did not kill the women; it did save them before the tenth week. He did not mean cases in which the tubal pregnancy had gone on to the fifth or sixth month, to which reference had sometimes been made. Of course at that date the ovum would have to come away. The only case of his five in which there had been any after-symptoms due apparently to the remains of the pregnancy destroyed by electricity, was in a case in which he tapped a tubal cyst last fall, the patient then refusing laparotomy. In conclusion, he said that he agreed with the author that the ideal method of dealing with the cases was by laparotomy; but people in Kamtchatka need not wait for the arrival of a laparatomist from New York, but might wisely resort to electricity.

DR. GRANDIN said it was very much like bringing coals to Newcastle for him to say anything on this subject. He had talked about it considerably, and had found that he and his friend, the author, never had been able to agree upon it. If any paper could carry conviction, the one just read ought to do it. But he was still steadfast to the faith within him; not because he had had considerable experience with electricity,

and knew how to use it, and did not fear it, but because of a well-grounded belief that the use of electricity, in the absence of symptoms of rupture, was safer for the woman immediately than was laparotomy; and, further, because he knew that if at any future time these insignificant remnants should give rise to trouble, laparotomy could at any time be done as well as if it had been done primarily. In other words, he believed that primary laparotomy, in the absence of symptoms of rupture, was subjecting the woman to needless risk. Again, primary laparotomy might be quite an ideal operation for the hospital, for the surgeon who knew how to enter the abdominal cavity, and who, when he got there, was able to meet the emergencies which in any case, however simple, he might have to face; but it was very different with a man who had never entered the abdominal cavity and had never seen the abdominal cavity opened. His position was very like that of the student who came to his first obstetrical case or who made his first vaginal examination; if he did not enter the rectum, his experience would be different from that of many students when they first examined a woman under the bedclothes without the aid of sight. The chances were that the physician, on opening the abdomen for the first time, would not know just what to do with the tube. He asked, Was there a gynecologist in New York philanthropic enough to leave his work and go a long way into the country to do laparotomy when there might be no money back of it?—do it for nothing? Could the average man leave his practice to act as an unpaid expert? In short, the country practitioner was bound to use the best means at his disposal, and that was electricity. He could use electricity with perfect safety to the woman; it would kill the fetus, and this would, if not absorbed, remain quiescent, or, at most, cause a small pyosalpinx. So far as that was concerned, it could be reasonably said that many women were going around with a little pus in their tubes and were none the worse off, except for slight attacks of pain.

To look at the subject from the statistical standpoint, all must be familiar with the forty-three carefully-recorded cases of ectopic gestation treated by electricity, collated a few years ago by Dr. Brothers. Of these forty-three cases only one proved fatal, and in that one puncture was resorted to after electricity had been used. The woman died of septicaemia because of the puncture, and not because electricity had been used. In one other case electricity was used at the fifth month, whereas those who advocated this agent drew the limit at the third month, for after that date we were dealing with more than a fetus and its membranes—we were dealing with a maturing placenta. In such cases it was folly to use

electricity. That patient had ulceration into the vagina, although she did not die. It was needless to say that in another case—one of gestation at the eighth month—electricity should not have been employed. In that instance also the fetus ulcerated through the vagina, although the woman did not die. Of the forty-three cases, twenty-five were heard of from one to eight years after the ectopic gestation had been treated by electricity, and all were well. This disposed of the argument, pretty thoroughly he thought, that the remnants would do harm. They might do harm, but in these twenty-five cases which were afterward heard from they did not cause any trouble. With these facts before him, the speaker was still of the opinion that up to the third month, with absence of symptoms of rupture, the proper treatment was by electricity. But if there were any evidence of rupture, he would advise opening the belly at once, to avoid danger of death from internal hemorrhage. The form of electricity to be used was galvanism. There was a hypothetical risk of rupturing the cyst by exciting contraction of the muscular fibres in the tube, if faradism were used.

DR. BOLDT said, with regard to country practitioners, that he doubted whether they were able, as a rule, to make a diagnosis of ectopic pregnancy to begin with, or to use electricity if they did make the diagnosis. The majority of them knew as little about the correct application of the galvanic current as they did about abdominal section. For his own part, he had never been so fortunate as to see cases of tubal pregnancy before there were symptoms of rupture and hemorrhage. He believed, with Dr. Hanks and Dr. Grandin, that before the tenth week of gestation patients might be treated safely by the galvanic current, although he would personally prefer to do laparotomy. He would prefer to remove the tube, for the added reason to those which had been given that it would be rendered useless if allowed to remain, would become the seat of a pyo-salpinx; and even a small collection of pus was not innocuous, although not as dangerous as a larger collection. While, therefore, he would prefer to open the abdomen, if the patient would consent, he still believed that we were perfectly justified in using galvanic electricity up to a certain period of gestation.

DR. KRUG did not think we should attempt at this Society to lay down rules for the country practitioner. We ought rather to strive for the safest and ideal method, and establish rules for that, instead of opposing it on the plea that it might not be safe in everybody's hands. Even admitting that the country practitioner was to be debarred from doing abdominal surgery, he thought that electricity in his hands was about as unsafe as the former. He believed that ectopic gestation

should be looked upon as one of the most malignant of diseases within the female pelvis, and ought to be treated accordingly. A great many more women died from ectopic gestation than appeared in the death records. The point which should be emphasized was the necessity for an early diagnosis. In doubtful cases the doctor might watch the patient awhile, but be prepared to do a laparotomy at any time or call in a surgeon; and when the diagnosis had become fairly well established, or if symptoms of rupture arose, the abdomen should be opened at once. If then the diagnosis could not be verified and a different condition were found, no harm would have been done, provided the operation were aseptically performed. On the other hand, the woman would be saved from the imminent danger of rupture. He would admit that electricity might kill the fetus, but there were well-authenticated cases in which fatal hemorrhage had occurred after the death of the fetus. Therefore the woman was not in safety even after electricity had done its mission.

He had recently operated on two cases of ectopic gestation on the same day, both of which illustrated the principles laid down in the paper. One patient had been sent to one of the hospitals in this city, but had evidently not received as careful attention as she should have, as her real condition was entirely overlooked, and she was returned to her home, after two weeks, with her cervix sewed up. The following day, when she came under the speaker's care, there was general peritonitis. When she had sufficiently recovered to enable him to make an examination, he detected an intraperitoneal abscess in the left epigastric region, and a doughy tumor behind the uterus almost filling the true pelvis. He opened the intraperitoneal abscess through the abdominal walls, and a week later he opened what he supposed was a retro-uterine hematocoele through the vagina. It, however, proved to be an ectopic gestation, so he removed the fetus and placenta, washed out the cavity, and drained through the vagina. The patient was doing well.

That same day he had to operate on a woman who was then in a dying condition, general peritonitis having set in after the rupture had taken place some ten days. She had been menstruating at the time of her first intercourse; thereafter she had been a little over time—she had what her physician called a miscarriage. Shortly afterwards she suddenly went into collapse, was put to bed; but her attending physician did not make a diagnosis, and consequently an operation was not performed until ten days later, when she was in a hopeless condition. The speaker concluded his remarks by saying that if a member of his own family were the patient, and the diagnosis, though not positive, pointed strongly toward

extra-uterine gestation, he would advise an exploratory incision.

DR. E. L'H. MCGINNIS asked Dr. Krug what the statistics were of death from hemorrhage after the fetus had been killed by electricity, and where they could be found.

DR. KRUG replied that he was not prepared to answer the question immediately, but that he was sure cases had been reported in which there had been fatal hemorrhage after the death of the fetus. He would not say, however, that electricity had been used.

DR. MCGINNIS remarked that laparotomy might be an ideal operation, but it was a question in his mind whether it was the ideal treatment in the class of cases under discussion. Indeed, he did not think there could be an ideal treatment before the third month, for the reason that no two cases were alike. Statistics certainly showed that prior to that date, when there were no signs of rupture, electricity was followed by better results and was much safer in every way than any other form of treatment. It was much easier to apply galvanism than it was to operate, and by its use the unnecessary dangers of laparotomy were avoided. Even in the best hands laparotomy was attended by such dangers as shock, hemorrhage, of encountering adhesions, sepsis, etc. What the patient desired was to get well, and he did not doubt but what nine hundred and ninety-nine out of one thousand would choose electricity in preference to laparotomy, if the comparative dangers of the two methods of treatment were fairly explained to them. He thought the author would have to modify the statement which he had understood him to make, that it was criminal to wait and dally with electricity.

DR. A. H. GOELET said he held very decided views on this subject. Given a case of tubal pregnancy prior to the third month, and prior to signs of rupture, he would use electricity in preference to doing laparotomy. There certainly could be no objection to its use when there was no immediate and urgent necessity for laparotomy. He believed that if the conditions were stated plainly, clearly to the patient, she would decide in favor of electricity every time. It might be assumed that if a secondary laparotomy should prove necessary it would involve greater risk than primary laparotomy, but he thought such increased risk would be more than offset by the greater danger of primary laparotomy as compared with electricity. While holding these views personally, yet he always tried to state the case fairly to the patient, and allow her to decide between laparotomy and electricity, and thus far the choice had always been in favor of the latter.

He thought it was folly to use the faradic current. Some experiments made recently by Martin on hens' eggs showed that the faradic current had no influence whatever, while the gal-

vanic current was followed promptly by death of the chick. The speaker stated further that the galvanic current should be interrupted, if one would kill the fetus. The constant current had been advocated, but he felt confident that it was not efficient. He also said a word in defence of country practitioners. According to his experience with them, they were remarkably intelligent men, particularly in matters of diagnosis. He had never known one to bring a case to him having made a gross error in diagnosis. The general practitioners in the city were more likely to make mistakes, for the reason that they knew they could at any moment obtain the opinion of a specialist, and therefore they did not keep so well informed in a general way. Regarding the danger of fatal hemorrhage, he was convinced that it was no more likely to occur if electricity were used than if it were not used.

DR. BOLDT asked, apropos of the danger of laparatomy compared with that of electricity, how many fatal cases had been credited to laparatomy. He knew of none.

DR. JANVRIN replied to some of the questions which had been raised. First, the tube, of course, was practically destroyed by the destruction of the fetus by electricity. It being useless, he thought it would be better to have removed it and got it out of the way as one would any other foreign substance. It was liable to cause future trouble. As to the two cases reported by Mann, in which there was subsequent trouble, he felt pretty sure that the fetus had been killed between the second and fourth months, and probably between the second and third months. In this paper he had referred to cases in which there was impending hemorrhage, expressing the opinion that in such cases a good abdominal surgeon should operate. He still thought such advice was perfectly sound. He would not advise any man to open the abdomen for removal of the tube on account of impending rupture, if he had never before performed laparatomy nor had had some experience in that line. His advice to such a person would be to get some one of experience to perform the operation for him. But any good general surgeon was justified in performing the operation, if he felt sure of his diagnosis. For if he should find something else than an ectopic gestation—a pyosalpinx or an hematoma, for example—its presence would justify the operation.

He thoroughly agreed with the statement credited to Fritsch by Dr. Krug, that tubal pregnancy should be looked upon as a most malignant condition. At least twelve or thirteen years ago Dr. White, of Buffalo, laid down before the American Gynecological Society this proposition, namely, that all pathological abdominal growths, no matter what they were, ought to be removed, if practicable, and it was the duty of any good surgeon to attempt it. The speaker said he certainly believed

in that proposition. His object in presenting the paper to-night was to point out a train of symptoms which would help every physician, whether in the city or out of the city, to recognize as early as possible the existence of tubal pregnancy. One who took account of the symptoms therein given would not, he thought, be often mistaken. In calling this the "ideal" operation he had meant also that it was the "ideal" *treatment*. The operation was the treatment of the condition. In reply to Dr. Goelet, he would say that in all these cases the danger of hemorrhage was immediate. We had no time to lose. Having made the diagnosis, we know also the danger of hemorrhage. The increasing tension of the tube was liable at any time to cause it to tear.

DR. GOELET interjected that he had not contended that an operation should not be performed where there was evidence of hemorrhage, and death of the fetus by electricity would put a stop to the development and remove Dr. Janvrin's asserted danger of impending hemorrhage.

DR. JANVRIN added that in all cases, although there had been no hemorrhage, the symptoms, however, indicating that it was impending, he would advise laparotomy. The simple question was whether to perform abdominal section or to use electricity. He did not know how the statement that faradism had no effect on chicks in the shell was to be harmonized with reported cases of death of the human fetus brought about by this form of electricity. Had there been an error of diagnosis in all of these reported cases of death of the fetus in the tube by the use of faradism? If so, then all of the statistics based upon such statements were worse than useless; they were harmful and misleading. Where subsequent hemorrhage had occurred in cases in which electricity had been used, he did not think the treatment had anything to do with the hemorrhage. In other words, the electricity probably did not cause the hemorrhage.

Stated Meeting, May 5th, 1891.

J. E. JANVRIN, M.D., *President, in the Chair.*

FIBROID TUMORS IN THE PREGNANT UTERUS.

DR. G. M. TUTTLE presented a specimen which he thought interesting, as illustrating the wonderful struggle of the reproductive function in spite of such obstacles.

The patient from whom the specimen was removed last week is a young, fairly nourished colored woman, age 25, unmarried, and a domestic.

She began to menstruate at 12, the flow being free, painful, and lasting usually some seven days. The menstrual periods

have been regular every four weeks, and during the past two or three years more profuse and accompanied with greater suffering. No severe flooding has occurred, but the periods are frequently prolonged to ten days or more. She was last unwell five weeks ago.

For a month past she has had severe abdominal pains of a hard, aching character, with difficult and burning micturition, obstinate constipation, and profuse leucorrhea. About two weeks ago the patient first noticed a tumor in the abdomen. There has been no vomiting, the breast signs are negative, and the patient denies sexual intercourse. The examination showed an irregularly protuberant belly, distended by large multiple fibroid tumors filling the entire abdominal cavity and extending up under the ribs. By the vagina the cervix was found small, rather soft, but with a narrow closed os externum, and drawn high up behind the symphysis. Behind the cervix, and filling the small pelvis, a large, hard, rounded, fixed tumor occluded the rectum and assisted in the upward displacement of the cervix.

The operation for the removal of these tumors was easy and uncomplicated. The mass was lifted out through a six- or seven-inch abdominal incision, its fairly small pedicle constricted by a rubber ligature, transfixed by pins, and the tumors, with the uterus, removed at about the junction of the body of the latter with the cervix. The cervical cavity was cauterized, the parietal peritoneum stretched with a continuous catgut suture to the peritoneum of the stump below the ligature, and the abdominal wound closed as usual, leaving the stump at the lower angle. The pulse and temperature have remained quite normal since the operation; there has been no pain or tympanites, and the patient is progressing favorably. On cutting open the mass removed, there was found, as is beautifully shown in the specimen, a small, tortuous, irregular uterine cavity, containing a fetus of about the third month enveloped in its intact membranes, and my intended hysterectomy thus turned out to be a "Porro operation."

Dr. H. J. BOLDT said that he was particularly interested in the treatment of the pedicle. If circumstances were favorable, he thought that the cervix should also be removed, so as to leave no possible chance for infection to take place, and that the patient might recover as after ovariectomy. He thought, with Dr. Tuttle, that no fixed rule could be laid down. In this case the pedicle was treated by the extra-peritoneal method. Another class of cases could be best treated after Schroeder's method, which is very much like that of Dr. Dudley. He would like to hear the views of some of the members as to the treatment of the pedicle. The co-existence of these tumors with pregnancy was extremely interesting.

DR. H. C. COE said that the case brought up the question of the Apostoli treatment by electricity for uterine fibroids. He recalled a similar case, where pregnancy had advanced to nearly four months; the patient had been under the electrical treatment, but intra-uterine galvanization was not employed, so that impregnation was possible. In this case he thought that pregnancy would not have advanced much further, as the tumors had encroached so much on the uterine cavity. He thought there was less danger to the patient if the extirpation of the tumors were done by the extraperitoneal method. Where the mass is large the removal of the cervix caused too great a loss of support to the pelvic floor.

DR. TUTTLE closed the discussion by saying that he did not know that pregnancy existed, as the patient, who was a single woman, denied the possibility of such being the case; but he would have operated just the same had he been aware of it.

A MURAL FIBROID OF THE UTERUS.

DR. A. P. DUDLEY showed a specimen which had been removed by suprapubic hysterectomy on the day previous.

The specimen was taken from a patient 43 years of age, who gave the following history: Married twenty three years; matured at 13; always regular; had pain with the flow. Had one child twenty-one years ago. Had two miscarriages before the birth of the child. At the age of 35 she had two violent uterine hemorrhages; these were not repeated again till last November, when she had another severe hemorrhage. She had been troubled with vesical irritation for the past two years, having a desire to void urine very frequently. Had been under the care of several physicians. Underwent an operation for lacerated cervix several years ago. The pain with her menses had been so violent for several years that nothing but opiates would relieve it. Physical examination revealed the growth located in the right anterior portion of the pelvis, resting close under the pubic arch. My diagnosis was mural fibroid of the uterus, occupying the right anterior half of it. This patient had undergone a thorough course of electrical treatment in a well-appointed hospital in Brooklyn, without relief, but rather injury, as she weakened under the treatment. I advised exploratory incision, with the understanding that I should remove the growth if it seemed favorable.

I made suprapubic hysterectomy yesterday, and removed the growth according to the method I have previously described in this Society—that of dissecting the growth out of the capsule, and, after ligating the stump, covering it over by the flaps removed from the growth. The operation was easily and quickly made. During the entire operation the patient's heart acted badly, and, although she reacted well after the operation, her heart still remained rapid, would not

respond to treatment, and she died from heart failure at 1 P.M. to-day, having a violent convulsion previous to death.

DR. COE thought that this seemed to be another case for the Apostoli treatment. There was a great deal in the systematic treatment by electricity, and some cases were not benefited by this agent because it was not fairly tried. If properly given, and as much as the patient could bear, it certainly caused a disappearance of these tumors. The exact nature of the tumors in this specimen had not yet been determined.

DR. DUDLEY said that his patient had been treated in a well-known hospital in Brooklyn by Apostoli's method of electro-puncture, but her condition was worse after the treatment. The cause of death was probably heart disease, for he had opened the belly after death, and had found nothing abnormal, not even any serum. He simply showed the specimen to illustrate his method of treating the stump. A little cap is made by stripping the peritoneum off the anterior and posterior surfaces of the tumor, and in that lies the stump, the flaps being brought together by a continuous catgut suture, so that nothing lies in the peritoneal cavity but the catgut ligature of the flap over the pedicle. No silk was used. As the rubber ligature was employed, the patient did not lose an ounce of blood. The operation was done under chloroform, using only an ounce and a half, and the heart's action was poor from the outset. The tumor lay low in the pelvis, and caused so much suffering that the patient begged for an operation. He believed, with Drs. Tuttle and Coe, that it was best to save the cervix, if possible. Schroeder's method of treating the stump differed from his own in leaving silk ligatures in the peritoneal cavity, while he left nothing but the catgut suture covering the pedicle.

DR. TUTTLE said that he thought Dr. Dudley was mistaken as to the Schroeder operation. Schroeder does not use a ligature for the pedicle, except the temporary rubber ligature. In all other respects the two operations were the same.

DR. DUDLEY asked what Schroeder did with the ovarian arteries.

DR. TUTTLE replied that, of course, Schroeder ligated these.

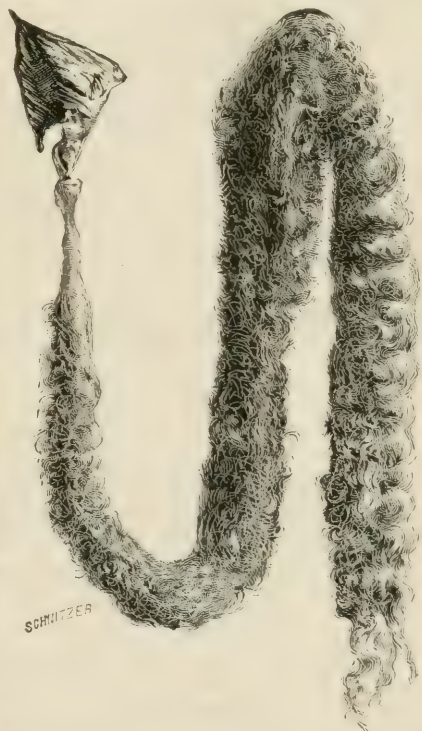
DR. DUDLEY maintained that Schroeder *did* leave silk ligatures in the abdominal cavity.

DR. BOLDT then said that he had gone over the operation, and that catgut was used altogether, and that no silk was left in the pelvic cavity.

DR. P. F. MUNDÉ presented

A SWITCH OF HAIR FIVE FEET LONG FROM A DERMOID CYST which he had removed from a single woman, 41 years of age, a month ago. There was a dermoid tumor of each ovary, the right one being as large as a pregnant uterus of

six months and containing this switch of hair, the other a small ball of hair and several teeth. This large switch sprang from a small, nipple-shaped protuberance at the upper portion of the sac, which was unilocular. At its root the switch was not more than an inch in diameter, gradually enlarging to a rope of matted hair as thick as the forearm. Dr. Mundé thought that probably very few cases of such enormous crinial development in a dermoid cyst are on record, although dermoids of the ovary are quite common, he himself having operated on fifteen cases, three of which were double.



An unusual feature in the present case was that one of the cysts (the left) had developed downward into the pelvic cavity, and pushed up the bladder so that it protruded into the womb when the peritoneum was reached, and narrowly escaped injury. As soon as the cyst was removed the bladder dropped back out of sight, showing that it had not been drawn up by adhesions. Recovery was uninterrupted.

Dr. JANVRIN, the President, presented

THE UTERUS, TUBES, AND OVARIES REMOVED BY VAGINAL HYSTERECTOMY FOR EPITHELIOMA OF THE CERVIX UTERI.

Mrs. Frances M., housewife, age 38 years, residence Yonkers, N. Y., has had three children; was married at 20 years of age. Patient noticed a bloody discharge, beginning about February 1st, 1891; also some pain in region of uterus. Other than this the history gave no evidence of uterine disease.

On examination (on April 17th) I found the entire left side of cervix covered by an epitheliomatous growth. No invasion of vagina or of the uterine appendages. Uterus quite movable.

Patient prepared for operation, which was done on April 20th. In securing the broad ligaments with ligatures I used

my new needle, devised for this purpose, and found that it acted beautifully, enabling me to pass the ligatures much more readily than with my old-style needle. I presented it to this Society about two months since, and show it again to-night.

The ligature passer is constructed upon the principle of the Sims uterine reposer combined with the Peaslee needle.

The full cut (Fig. 1) shows the "passer" as it is introduced (it should have been threaded with the carrying silk), and the dotted lines show how the needle is capable of being moved to any angle required.

The small cut (Fig. 2) shows, *detached*, the movable slide which holds the needle in position when in use. The instrument is perfectly aseptic.

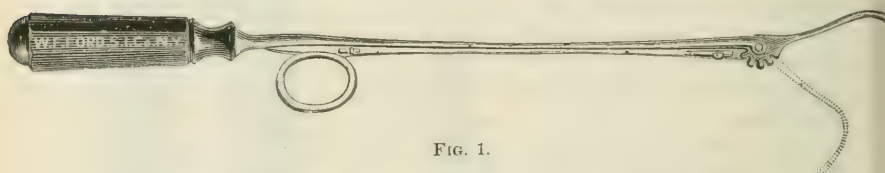


FIG. 1.

The usual iodoform tampon was applied after the removal of uterus together with both ovaries and tubes.

Highest temperature since operation was on the evening



FIG. 2.

of April 21st, when it stood at 100° . Bowels were moved on second day after operation. No unfavorable symptoms during convalescence, which has been steady and satisfactory.

I present the specimen more especially to call attention to the ease with which the ligature can be applied with this new needle—almost, if not quite, as easily as one can apply the clamp forceps.

FEMORAL HERNIA.

DR. A. H. GOELET narrated a case of femoral hernia in which he had recently operated. He remarked that he thought much less difficulty would be experienced in reducing femoral hernia, in operating, if the sac were dissected from its attachments above the ring first, so taxis can be made directly upward toward Poupart's ligament, instead of attempting to do so before freeing it.

The patient from whom this specimen was removed, Miss K., age 18 years, summoned me for symptoms of strangulation April 25th, and the operation was done the same day. Her statement was to the effect that she was

only cognizant of the rupture for the past six weeks, and that it had given her no trouble previous to strangulation, because she was always able to rub it away, and she had not even mentioned it to her mother. The thickened condition of the walls of the sac proved it to be of longer standing, which was admitted by the patient afterwards. This thickness of the sac, with the misstatement of the patient, caused the operation to be prolonged unnecessarily through fear of perforating the gut. I have been obliged to do this operation several times, and in every instance the thickened condition of the sac and the glistening appearance of some of its layers have misled me into the belief that I had reached the gut before the sac had been penetrated. I have never regretted the delay, however, which extreme caution has compelled, for I believe it is always better to err on the safe side. Sometimes the gut, when slightly adherent, will slip out of the sac and back into the abdominal cavity during taxis, so gradually and slowly that, when there are much inflammation, discoloration, and thickening, it will not be noticed, and the operator is frequently deceived in thinking that there has been only partial reduction.

There is one point that I have learned about the operation which is valuable to know, viz., that it is easier to effect reduction if the sac is dissected from its attachments above Poupart's ligament, where it has worked its way, before the constriction of the ring is divided, for then the taxis can be exerted directly in the axis of the crural ring; unless this is done, taxis is exerted downward and at right angles to the ring. I believe it is better surgery to reduce the hernia before opening the sac; and unless one can be sure it contains no omentum, it should always be opened before it is tied and excised.

The patient has made an uninterrupted recovery, the wound uniting by first intention, except at lower angle where a drainage tube was inserted, and this healed immediately on its removal.

There is one point which I have observed in connection with moving the bowels both after this operation and after laparotomy, viz., that frequently seidlitz powders will be rejected and will add to the accumulation of gas and the suffering of the patient, but castor oil will be retained by the stomach and its action will be satisfactory and afford relief. In this case, in the absence of any nausea following the anesthetic, a seidlitz powder was administered six hours after the operation, but was immediately rejected, as were several others given later; then oil was given with good and prompt effect.

DR. CHARLES JEWETT read a paper on

TUBO-UTERINE PREGNANCY.¹

DR. H. T. HANKS said that one symptom which Dr. Jewett had mentioned he had already noticed in connection with tubal pregnancies, viz., a peculiar flattened rather than a globular enlargement of the uterus.

DR. COE remarked that the point raised by Dr. Hanks was a very important one, for so much stress is laid on the enlargement of the uterus in these cases that one is likely to run into error if too much dependence is placed upon this sign. He recalled the case of a private patient of his own, now in the Woman's Hospital, in which the patient had missed one period and had morning sickness; the uterus was large and anteflexed, and at one horn could be detected a well-marked mass the size of an English walnut, so that the diagnosis of ectopic gestation seemed to be quite probable. She was thoroughly examined under ether, a sound was passed, and the uterus was found as large as if two and a half months pregnant. That night the patient began to flow, and the next morning she passed a product of conception. Another patient, who had missed two periods, had all the symptoms of pregnancy, and, in addition, sharp, colicky pains; the uterus was large, anteflexed, with the peculiar projection of the organ anteriorly characteristic of pregnancy, while at one horn there was a round, fluctuating mass which seemed to increase in size while the patient was under observation. The diagnosis of extra-uterine gestation was made, but, without any treatment whatever, the uterus regained its normal size. This case showed that this enlargement of the uterus is not always absolutely characteristic, and that such an enlargement may be caused by the presence of a cyst, or even from subinvolution. It must be exceptionally difficult in most cases to detect the difference between antero-posterior and lateral thickening.

DR. E. H. GRANDIN said that he would like to hear a discussion on the necessity of emptying the abdominal cavity of all the blood where primary laparotomy was performed for ruptured tubal pregnancy. He recalled an operation in this city, for ruptured ectopic gestation, where a great deal of time was consumed in the attempt at thoroughly cleansing the cavity. The clots were everywhere, even under the liver. Fully one half-hour was spent in these efforts at cleansing. He questioned if, in such instances, it were not preferable to trust to drainage through gauze packed in the lesser pelvis. The patients were usually in shock after this accident, and prolonged attempts at thoroughly cleansing the cavity would

¹ See original article, page 806.

only add to the shock. He would not be understood as underrating the necessity of cleansing the cavity, but in instances like those under consideration he believed it preferable to trust somewhat to drainage.

With reference to the shape of the uterus in cases of pregnancy, he said that some years ago, whilst engaged in clinical teaching, he had satisfied himself of the great value in early diagnosis of the peculiar shape of the uterus in the early months. The body of the uterus resembled a flattened sphere, bulging over the cervix. The bulging was due to the fact that early in pregnancy the uterus enlarged chiefly in the transverse diameters. So far as his experience went, a spherically enlarged uterus with its lower segment projecting uniformly over the cervix was characteristic of pregnancy. The patient might falsify the rational history, but she could not alter the shape of the uterus. Hence the great value of this shape in diagnosis.

DR. HANKS said that he was particularly pleased with this point, which he had never heard mentioned before. He recalled three cases which had come under his observation, where he had performed laparotomy and found the uterus large and peculiarly shaped, like a subinvolted uterus.

DR. A. H. BUCKMASTER said that it was to-day doubted whether it was possible to drain the peritoneal cavity, as the drainage tube would probably become encysted within forty-eight hours, if there were not much motion; the fluid that appears coming from the artificial cavity. This has been found to be true in the lower animals, and he believed it could be also true in the human subject. As to clearing out blood clots, he thought it contrary to our present light to leave them in the pelvic cavity, as they might cause sepsis.

DR. GRANDIN said that when he spoke of drainage he did not refer to drainage tubes, but to gauze packed in the cul-de-sac, and this would not become encysted for some days.

DR. COE said that some of the European operators were not so particular, as they left in drainage tubes for five or six days.

DR. W. C. PRYOR said that, as the patient died under the anesthetic, he would like to ask what was given and what apparatus was used.

DR. TUTTLE said that he was much interested by the points which had been raised, but he did not think he could be convinced that the peritoneal cavity could not be drained in twenty-four or forty-eight hours. He was impressed by one point, the large size of the fetus, for Tait says that the rupture invariably takes place before the fourth week.

DR. JANVRIN, the President, said that, in the paper read by him several weeks ago, mention was made of the peculiar enlargement of the uterus in cases of extra-uterine pregnancy,

viz., only in the upper part and toward the horns; while anteriorly and posteriorly it was not enlarged and globular, but was flattened. He had noticed it in a case post mortem and in two other cases since. The point mentioned by Dr. Tuttle, referring to the size of the fetus, he considered exceptional in the class of cases under discussion, and he believed that rupture usually takes place before the end of the third month. As to drainage with gauze, he had never used it in cases of this kind, though he had employed it in laparatomies where he had been unable to control all the hemorrhage, and always with satisfaction.

DR. PRYOR remarked that if anyone had been so unfortunate as to employ drainage in cases of tubercular peritonitis, he must have found that it would drain for weeks, and sometimes until the patient died.

The discussion was closed by DR. JEWETT, who said, with reference to the question raised by Dr. Hanks as to the transverse enlargement of the uterus in cases of tubal pregnancy, that he had two or three specimens of the kind, and that his impression was that they bore out the theory of Dr. Janvrin.

In normal pregnancy, in the early months the body of the uterus gradually conforms to the shape of the globular ovum, so that a transverse section of the corpus uteri at that time is almost a perfect circle.

With regard to the question of fully emptying the abdominal cavity of clots, he said there were usually in these cases a large number of clots everywhere in the peritoneal cavity and extremely difficult of removal. Much valuable time might be saved if all or a portion of them could be safely left. His patient would have gone to bed in fair condition, if he had not lost time in cleansing the peritoneum of clots. Yet he would hardly feel safe in leaving much of this material after it had been exposed to the air. He thought a small number of clots, if aseptic, or nearly so, might be absorbed. Surely no drainage would clear them out. It was certainly imperative to control all active hemorrhage before closing the abdomen. He recalled a case, recently reported by Ahlfeld, in which hemorrhage from a torn adhesion was overlooked and the patient died in consequence. In another case, in which the speaker had assisted the operator, hemorrhage from a torn adhesion was controlled, but, two or three days after the operation, the patient, who had been doing well till that time, got out of bed, when a secondary hemorrhage occurred, resulting fatally before assistance could reach her.

In answer to Dr. Pryor's question, Dr. Jewett said that ether was the anesthetic used in his case, as he was far from home and had come unprepared. The anesthetic was given with an improvised inhaler made of a folded towel and a

newspaper. He thought that Dr. Tuttle must have misquoted Tait in regard to the time of rupture in tubo-uterine pregnancy. This variety may go nearly to the fifth month before rupturing. Cases had been reported in which interstitial pregnancy was supposed to have gone to the sixth month, and even longer, without rupture, but they were probably errors.

PUERPERAL HEMATOMA OF THE VAGINA.

DR. GRANDIN narrated a case of hematoma of the vagina which he was called to see twelve days after delivery. The patient was a multipara, and the labor had been natural. The physician had made his last visit, but was summoned because of the appearance of the hematoma, which was very large, filling the whole vagina, and so tense that he judged the hemorrhage was probably still going on. The woman's condition was good, and the pulse not rapid. He advised expectancy. About two weeks later he was asked to see her again, and found her with hectic and a high pulse, and the tumor extending to the vulva. The tumor was retroperitoneal, the blood having dissected its way up to the broad ligament, and it pressed so upon the rectum that the patient was unable to have a passage from the bowels. He freely incised the mass, opening into a cavity into which he could readily insert his fist, washed it out thoroughly with hot water, next with peroxide of hydrogen (to destroy the pyogenic membrane), and then packed it with gauze. The case convalesced well. These cases were rare. Although connected with two large Maternities, it was the first instance he had seen. The treatment of such cases was not to interfere whilst the hemorrhage was still active. Absorption often occurred spontaneously. If not, especially on symptom of suppuration, free incision was called for.

PERFORATION OF A SEPTIC UTERUS WITH A CURETTE AFTER LABOR.

DR. TUTTLE narrated a case which he thought was very rare. He was asked to see a patient who had been delivered a month previous. The labor had been complicated with adherent placenta. The patient had been up and about the house, but called at the attending doctor's office because she did not feel well. He decided to curette her then and there, as he had often done before; so he put her on his table, and, after sterilizing his instruments, passed a curette into the uterus. He immediately felt something give way, and, thinking that the instrument had penetrated the walls of the uterus, he had her taken home in a carriage. That night she began to vomit, and the pulse ran high. Dr. Tuttle was called in, and at midnight she was removed to the Roosevelt Hospital,

where she was operated upon at once. The pelvic cavity was full of pus, there was a hole in the uterine wall, and a small pyo-salpinx. The uterine tissue was so soft that a sound could be pushed through any part of it. The woman was vomiting blood when she was put on the table, and gradually sank and died. The speaker was struck with terror at the thought of how much damage could be done with a sound used carelessly in cases where the uterine walls were so soft.

DR. HANKS asked if the pus was supposed to be in the uterus at the time of the accident.

DR. TUTTLE replied that the curetting had been done at noon, and he had performed laparotomy at midnight on the following day.

DR. JEWETT asked if the cervix did not show some evidence of the diseased condition of the uterine tissues, and whether it would not have been revealed by bimanual touch.

DR. TUTTLE replied that he did not think it could have been appreciated by touch. The uterus was not flabby, the only peculiarity being the way in which the sound penetrated it.

DR. HANKS asked what was the size of the uterus.

DR. TUTTLE answered that it was not above normal. The curetting was done for the continued bleeding.

DR. G. M. EDEBOHLS related the history of a somewhat similar case which came under his care about a year ago. The patient had a laceration of the cervix, was thin and flabby, and so weak that he proposed to close the laceration without ether. Examination showed that the uterus was so soft and putty-like that it could be doubled on itself forward or backward, as desired, without returning from either position when released. He passed Bozeman's double catheter, and on turning on a stream of bichloride, to wash out the uterus, he found that the catheter played rather too freely and entered too deeply, and it suddenly dawned upon him that he had penetrated the peritoneal cavity, into which he had injected about eight ounces of the solution. He put the patient under ether, did laparotomy, sponged out the eight ounces of bichloride, and closed up the rent, which was situated just above the os internum, was transverse in diameter and nearly two centimetres long. She recovered perfectly, and six weeks later he closed up the laceration of the cervix.

DR. HANKS also recalled a similar case which was reported by Dr. Dudley a year ago. An abortion had been produced, the patient was not doing as well as her physician wished, and he called in Dr. Dudley, who found two or three inches of intestine protruding from the cervix. He replaced the intestine and sent for the speaker. It seemed to him marvelous that these uteri should be so friable.

DR. BOLDT said, with reference to the case reported by Dr. Tuttle, that he could not but believe that there must have been something in the uterine cavity which was carried into the peritoneal cavity when the uterine wall was punctured. We all know that occasionally the uterine wall is pierced by a sound or curette. He understood Dr. Tuttle to say that the uterus had not been washed out before curetting.

DR. COE thought that the change in the walls of the uterus must be explained by the presence of some subacute septic process. He recalled a case of abortion in which a dull wire curette was introduced into the uterus in order to remove retained placental tissue, and when withdrawn brought away a loop of intestine. Laparotomy was promptly performed, and an opening in the posterior wall of the uterus was sutured.

DR. GOELET said that these cases reminded him of the man who insisted that the uterine cavity was six inches in length and offered to prove it by passing the sound. He did succeed in several cases in passing the sound six inches, and this rather showed what violence can be done with impunity—though these remarks are not intended as an intent to encourage such manipulations.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, February 20th, 1891.

The President, W. W. JAGGARD, in the Chair.

EXHIBITION OF FIBROID TUMORS OF THE UTERUS.

DR. HENRY T. BYFORD.—I brought these specimens to-night because they illustrate, in a complimentary way, a method of operating for such cases which has received some adverse criticism, and because they tend to refute that criticism. They are fibroid tumors of the uterus, removed last Wednesday and Thursday.

The first case is that of Mrs. Florence S., a married lady 37 years of age, who had not been well for nine years, and had noticed a growth for seven years. She flowed profusely at her menstrual periods, which were followed by a week of intense pain. She had, in fact, only two days of comfort in the month, and had become very anemic. The tumor, as observed by Dr.

Galloway, was growing. Electricity had been tried for three months last summer, then after an interval of rest was tried for another month, but without any benefit whatever. The tumor came from the right cornu of the uterus, and its removal was rather difficult on account of the shortness of the broad ligament. The pedicle was quite long, as the lower part of the uterus was not at all affected.

The next specimen is a tumor removed from a married lady, 38 years old, who had been treated by Dr. Cary. At first he noticed no tumor whatever; later he began to notice it, and when I saw her it filled the pelvis completely. You see it is in the shape of a fetal head. It lay across the pelvis and pushed up the cervix uteri to a level with the pubic bone; the uterus was entirely above the pelvic cavity. It grew from the posterior wall of the cervix and extended down in the connective tissue, so that the cervix projected but half an inch below its junction. Introducing a finger into the rectum, I found that it had burrowed down beside the rectum, and seemed to have carried the rectum up as it grew down and filled the pelvis. The point I wanted to bring out was the method of operating. One tumor came apparently from the fundus and the other from the lower part of the cervix. In the first case I had a stump two inches long. After I had gotten down pretty well, as far I could conveniently, I first secured it with an elastic ligature; then I made a stump by ligating in three parts with heavy silk, drawing the edges together, after cutting out a melon-shaped piece; I then separated the bladder, opened into the vagina at its junction with the anterior wall of the cervix, turned the stump down into the vagina and fixed it with a clamp introduced from the vulva.

In the other case I tore the tumor out of its subperitoneal pelvic bed, put an elastic ligature under it, enucleated it from the mutilated cervix, constructed a stump, opened into the vagina in front, and fixed it there as in the other case. Thus both the long, ready-made stump and the short, artificially constructed stump were treated in the same way, with equal facility and with equally good results.

In the second case, in which the operation was so difficult and in which the whole pelvis was a bleeding mass, the patient commenced to pass gas naturally in twelve hours. In the second case the patient was quite hungry by evening of the next day, and has got along since without a bad symptom. There are three objects in using the clamp: one is to prevent hemorrhage, another to cause an early separation of the slough, and a third to cover the sloughing tissue so as to prevent septic absorption.

DR. T. J. WATKINS.—I would like to ask Dr. Byford

whether he considers that his second specimen was developed from the cervix or from the body of the uterus.

DR. BYFORD.—From the cervix.

DR. WATKINS.—The literature of this subject states that the development of fibroids from the cervical tissue is very infrequent. I had the pleasure of assisting Dr. Byford in this operation, and it rather seemed to me that the fibroid had developed from the body and had forced itself down into the cervix, and that by continuous traction it may have so obliterated the cervix as to give the impression of its having developed from that portion of the uterus.

I was very much pleased with Dr. Byford's treatment of the stump. I do not see any reason for treating the stump by abdominal fixation when we have this method, which is so much better. Vaginal fixation causes little if any tension, diminishes the risk of infection, and also leaves much less raw tissue to heal.

DR. F. H. MARTIN.—Some time ago Dr. Byford exhibited a specimen operated upon by this method, and my remarks at the time might have been construed as a criticism, and I wish to modify those remarks, if they have been construed by any one in that way. I have seen this operation performed by Dr. Byford seven or eight times, and the cases I have seen, without exception I think, have recovered. One could almost say from the beginning that in each instance the result would be successful when the operation was finished. There is not a particle of raw tissue left in the peritoneal cavity, unless it be from a separated adhesion. All raw surfaces of the stump are separated entirely from the peritoneal cavity, so there is no possibility of anything like bloody oozing into the peritoneal cavity.

DR. BYFORD, in closing the discussion, said: With regard to the origin of the tumor, I will state that the right sacro-uterine ligament was over the tumor on a level with the brim of the pelvis.

Before the operation there was almost none of the cervix below the tumor posteriorly with which to form a stump.

In regard to the safety of the operation, I would state that I have done it fourteen times with one death, and that was due to septic peritonitis above the incision, while the peritoneum below, in the bottom of the pelvis, was normal.

REPORT OF CASE OF EXTRA-UTERINE PREGNANCY; OPERATION; RECOVERY.

DR. E. C. DUDLEY.—On the 13th of November last I was called to Rockford, Ill., to meet Dr. Kimball, who is present this evening, in a case in which he had made the diagnosis of

extra-uterine pregnancy about five weeks past term, with a dead child. Dr. Kimball a few days before had etherized the patient and had succeeded in passing his hand to the fundus of the uterus, as he supposes, and had unmistakably mapped out the outlines of the child in an adventitious uterus. Six days later an incision was made in the median line from a point a little above the pubes to a point very near the umbilicus, and the adventitious uterus was exposed. Spreading out upon this was the actual uterus, quite thin and extending about four inches higher than we had been able to pass the probe or explore with the finger, even under ether. The uterine canal had been collapsed by pressure against the pubes, so as to prevent the passage of the finger or sound to the fundus. The uterus was about seven inches deep—a fact we discovered before opening the abdomen. The adhesions were such that the abdominal cavity was not opened; and they also obscured the two horns of the uterus, so that it was impossible to demonstrate on which side the pregnancy had occurred. After cutting down in the median line upon the sac which contained the child, the great vascularity of that part and its softness led to the conviction that the placenta was just underneath; moreover, the bulging on the left side of the abdomen showed that probably the greater part of the placenta was on that side. A hard sensation to the touch showed that probably the child could easily be reached on the right side. Consequently I made a transverse incision towards a point about two inches above the right anterior superior spinous process through the abdominal wall and that part of the sac underneath which could easily be distinguished the bones of the skull. The child was easily extracted. A large rubber drainage tube was inserted, together with a large Miculicz gauze drain. The wound was closed with many silkworm-gut sutures, and the patient has made an uneventful recovery. The placenta, being adherent, was left; its removal I am quite sure would have caused death from hemorrhage; it is now reduced to about one-eighth of its original size, and is coming away in small pieces. The rubber drain is still in, and the cavity is washed out daily with a solution of bichloride 1:4,000. Dr. Kimball will give the further history of the case.

DR. F. H. KIMBALL.—I was called to this case early in October, about three weeks before Dr. Dudley's visit. The woman gave a history of having been confined four or five years before that time, and, as there was some difficulty about the case, the physician in charge had applied forceps. The forceps was used early, and the child was delivered, but a very serious laceration of the cervix was the result, although not accompanied with much laceration of the perineum. She never knew a well day after that time, but she conceived

once, giving birth to a living child, and had two miscarriages in the interval before she became pregnant with this child. She said that during this last pregnancy she felt different from what she ever had before; that the motion of the child was different—she described it as a rolling motion rather than the ordinary fetal movement. She suffered a great deal with nervous disturbances, and had temporary losses of consciousness. She was very irritable, so much so that it was a subject of remark. She had nausea without intermission, and she suffered pain continually during the nine months of her pregnancy. When seen she was having rather irregular pains, and she said that she thought it was about a month too early for confinement. With a small quantity of anodyne the pain ceased, and she was left with instructions to send for help in case of any need. I heard nothing further from her for two weeks. On my second visit she reported that fetal motion stopped the day after I had first seen her, and I presume the death of the child occurred at that time; she was in about the same condition as she was when first seen. I anesthetized her and made an examination, and satisfied myself that it was a case of extra-uterine pregnancy. I removed the patient to town, secured the advice of Dr. Dudley, and later submitted the case to him for operation. The operation was delayed in hopes that the placental circulation would diminish. The progress of the case since the operation has been good, the temperature has not gone above 100° , the patient has suffered no pain, her appetite is good, and she says she feels well.

The sac holds hardly half a pint of fluid, and has dropped into the left iliac fossa. The placenta is coming away in small pieces, each about as large as a pea, a number of these coming away at each washing. The patient is up and attending to her household affairs. The query in my mind is whether the laceration of the cervix and its resulting phenomena might not have been the occasion of this condition.

DR. KARL SANDBERG.—The only thing I would call your attention to is the recommendation of Mr. Lawson Tait—and probably he is the best authority on this subject—in regard to dealing with the sac and the placenta after an operation of this kind, namely, leaving the placenta untouched, to wash out the sac thoroughly with great quantities of water and introduce the sutures; then to wash it again and close it up partly around the trocar, leaving one or two stitches untied; then to empty it by siphon action of the trocar with attached tube, carefully avoiding the entrance of air into the cavity; and then close it up entirely. This method is described in his last work, but he states that he has not tried it—it is only a suggestion which has come from his experience with similar cases; I think with cases of congenital cysts. I was very favorably impressed

with the idea, and do not see any objection to it. If I had a case of the kind I should certainly be inclined to try it, under aseptic precautions. I should think the patient would be just as safe with that cavity closed up as with it drained, or packed with gauze, or washed out daily, and that final recovery would be more speedy with Tait's method than with any other that has been tried so far.

DR. E. C. DUDLEY, in closing the discussion, said : In this particular case the plan alluded to by Dr. Jaggard could not have been carried out entirely, *i.e.*, we could not have saved the child, because it had died before we saw the case. I would not attempt the removal of the entire sac in a case like this, which permitted us to extract the child without invading the peritoneal cavity ; besides, the removal of the sac is often impossible, and an unsuccessful attempt would necessarily expose the patient to great danger. Mr. Tait's plan of leaving the placenta without drainage may prove to be a safe one. All depends upon whether the placenta will remain aseptic in a tightly closed sac after the removal of the child. The idea intended to be conveyed in saying that this patient had made a good recovery was that her recovery had been good for two months, and that there was, in our judgment, every practical reason for supposing that it would continue to be so. Dr. Kimball has taken pains to see that she was not exposed to danger from sepsis. The secretions from the wound have been surgically clean. The woman thought that the child had developed on the right side, where the head was. Tait advises that the incision be made on the side from which the child had developed. He says that the sac may often be directly opened there without entering the peritoneal cavity at all. In this case, at least, the lateral incision would have been practicable.

DR. F. H. KIMBALL.—In regard to the question of labor, she gave a history of having been in labor eight or ten hours before I reached the house—long before I was sent for, in fact. When I was there she was not in real labor ; she had a few fleeting pains about the abdomen, but none that could be called labor pains. Some ladies of experience who were there said she had been in labor for some hours, but that there was nothing abnormal about it to attract their attention. I could not find any fetal heart at that time. She said she had not felt any fetal movement since the day following my first visit.

MULTILOCULAR CYSTS OF OVARY.

DR. J. H. ETHERIDGE.—I have a couple of cases to report. The first was a case of multilocular cyst of the ovary from the left side, filling the abdomen and pelvis very

full. There was nothing strange in that, but the strange part of it was the effect it produced upon the other ovary. It squeezed everything in the pelvis and abdomen so much that it shut off the circulation from the other ovary entirely. It was easily removable by the finger, and no ligature was used at all. Upon being laid open it presented the appearance of a complete apoplectic effusion into the ovary outside of the stroma and within the cortex.

The other case was similar to it, almost a repetition, a multilocular cyst. There were fifteen or sixteen cysts in this tumor, filling the abdomen to its utmost limit. The right ovary was impinged upon in such a way that I could peel it out with my finger, no ligature being used. The characteristic structure of the ovary was present, but throughout the whole of the stroma under it there was an apoplectic hematoma. It is interesting to recall the steps that undoubtedly took place in producing this strangulation and death of the ovary. The encroachment on the blood vessels of the sound ovary grew greater and greater, and after a time the returning blood through the veins was shut off entirely, the artery in the meantime pumping blood into it until extravasation took place, the blood being held there by the cortex, and in that way the ovary was strangled to death. It may be that this is a very common thing, but to me it was entirely new, and to have in two months two cases exactly alike made it extremely interesting to me.

DR. HENRY T. BYFORD.—I have known cases of papilloma in which I could peel out the ovary entire without any pedicle whatever. Is it not possible that this was due to papilloma of the ovary?

DR. ETHERIDGE.—There was no papillomatous degeneration.

DR. JOHN S. CLARK read the paper of the evening, on

FIFTY YEARS' EXPERIENCE IN OBSTETRICS.

DR. WILLIAM E. CLARKE.—I was very much gratified at hearing Dr. Clark's paper, and I agree cordially with his remarks about wise conservatism in obstetrical practice; but how long he would have the practitioner wait before using the forceps he did not state. I suppose we must decide for ourselves. My experience in midwifery commenced about the same time the doctor's did. The doctor has been exceedingly fortunate in not having had more cases of craniotomy. I have not been so fortunate. After practising awhile in Rochester, N. Y., I took Horace Greeley's advice and came West. I went into Michigan and travelled along in stage

¹ See original paper, page 778.

coach, trying to find out where Chicago was. When about half-way through Michigan I stopped overnight, and, the next morning being Sunday, I, as a descendant of the Puritans, could not travel, so I went to church, and there a man, who had known my father as a physician, said he had moved out there in an early day, that his folks were sick, and he wanted me to go and see them. From that I was called to other families, and I stayed there several years. My experience there in midwifery was probably worth more to me than the experience I have had anywhere else during the same length of time. I remember a call requiring a journey of eighteen miles through the woods. I was chosen because I had the only forceps in the entire county. When I got to the place I found a woman who had been in labor three or four days and was then almost unconscious. Three physicians had been in attendance, but one of them left because a youngster was called in. I applied the forceps, and they pulled and I pulled, and we all pulled together; and, as the doctor said, we put our heads together, and it was three heads against one, but the one head was too much for the three, so we decided to attack the head, and I performed craniotomy; and I must say that was the most horrible operation that I ever performed, although I believe it saved the life of the woman. After abstracting the brain and meninges and some of the bones, I applied the forceps and brought the child out, and before I could tie the cord and place the child in a tub of water that had been got ready for its bath, it commenced to cry. I shall never forget the horror of the cry of the child so mutilated, and the curses I got from the household. I don't remember getting anything else for my eighteen-mile ride! The child weighed fifteen pounds. That was my second case of craniotomy. In another case I was called to, the poor woman was almost dead; forceps had been applied several times, and I know great efforts must have been made in applying them, for, introducing my hand into the vagina, I introduced it right into a pocket alongside of the womb. The efforts must have been very great to produce such a wound in the vagina. However, I slipped the forceps past the wound into the cavity of the womb, and put on both blades; but I could not move the fetus, and so resorted to craniotomy. The woman recovered, notwithstanding her mutilation. Where forceps have been properly applied I have never seen any reason to regret their use. Dr. Foster will recall a case where it took our united strength to deliver a fifteen-pound child that to-day is one of the brightest children in this city, and the mother, I believe, is in perfect health.

I would like to hear about Dr. Clark's experience with

laceration of the uterus and of the perineum: how often he has had them and how he has treated them. The first severe case I had, I inserted sutures before I left the bedside; and that has been my invariable custom, when I have been permitted to do it, and I think I have never seen a case but what was perfectly successful. I have had three cases of complete laceration of the perineum, and all made good recoveries.

DR. C. W. EARLE.—I am sorry that it was impossible for me to hear the first of the paper read by Dr. Clark, and also his paper read at a previous meeting, because it appears to me that anything said by a gentleman of such ripe experience is of great value to those of us who are interested in this subject. What he said in regard to the abortion habit, and to the procedure which is practised by a very large number of women—that is, teaching others to do it, and handing it down from one generation to another—and what he said in regard to mothers going with their daughters to abortionists, seems to me ought to be impressed upon the minds of women. There ought to be some way of bringing this to the attention of the sex. I cannot conceive the reasons which induce mothers to do such things. It has come to pass in some cases that, even before the marriage of a daughter, the mother will go to the family doctor and try to make some arrangement to keep the young woman who is about to be married from becoming pregnant for the first two or three years. It seems to me there ought to be some way of educating the moral sense of the female sex up to a declaration against such a procedure.

I was very much interested in what the doctor had to say in regard to treating a retained fetus after its death, but I must say that my practice would be somewhat different from his, although, being a much younger man, I am willing to bow to such an extended experience as his. It would be culpable for me, believing as I do, when a fetus had been dead for a considerable length of time, if there was a bad odor, even if the os was closed, to allow it to remain. And while perhaps invasion of the uterus is forbidden to some, I certainly should feel it my duty to dilate the os in some way, and get that decomposed, infecting mass from the uterine cavity. In his closing remarks I hope the doctor will tell us whether cases of profound sepsis have not sometimes occurred where things were left exactly to Nature. Within the last two weeks I have had a case of this kind where *everything* was left to Nature, and it appears to me that if I had not arrived upon the field about the time I did the woman would have died either from hemorrhage or sepsis. I was called to see the woman, and when I arrived the medical gentleman who

had been attending her was not there, and was not expected. He had done nothing, because he evidently believed in letting Nature take its course. The woman was suffering from profound hemorrhage, was pale, with some elevation of temperature and a rapid pulse. I made an examination and found a protruding mass of decomposed stuff, which I at once proceeded to remove. After removing this débris, I washed out the uterus thoroughly and filled it with boric acid. That woman has never developed a half-degree of temperature nor had a bad symptom since. She progressed to a rapid and perfect recovery. I cannot believe that it is safe to trust such cases entirely to Nature.

DR. T. J. WATKINS.—I would like to ask Dr. Clark if he has had any experience in the administration of morphia hypodermically for the relief of pain. In the beginning of my obstetric practice I used chloroform freely as soon as the head reached the floor of the pelvis, but frequently observed that the pains became weaker, which necessitated the use of the forceps. It has always seemed to me that the hemorrhage following labor is greater after using chloroform; but after using morphia hypodermically I have not noticed any of these ill effects.

DR. JOHN S. CLARK, in closing the discussion, said: I was relating my experience, and my experience has been, where the os was closed, to leave the ovum, trusting to the efforts of Nature to discharge it by disintegration or by absorption. I have had the most remarkable success all through life in treating these cases. In the few cases of death I have seen in abortion, I have been in doubt as to whether death did not occur more often from the violence done in the efforts to empty the cavity of the womb than would have occurred by the passive changes taking place in the ovum. Still, as I say in my paper, if hemorrhage occurs and continues, by all means get out the mass, if you can do it without too much violence. If the os is dilated and easily reached, go in and get it out. We all feel better when we know the uterus has been emptied. In one of the cases of death which occurred in my experience, I forced my way into the womb and turned out its contents. The woman lived a week or so and then died; that was a long time ago, but I have always been troubled lest perhaps my violence had something to do with her death. As I said before, I see so many cases where the offensive discharge is going on and on day after day; and where I see other discharges of the womb that are as offensive, and perhaps more offensive (as, for instance, cancer), without harm, I have come to be very cautious about violating Nature, and I like to be directed first by what Nature seems to point out; if she closes the

cavity, I would be rather loath to go into it. Of course, if I see bad symptoms, chills with fever, and sinking of my patient, and there is still a discharge of offensive matter, I think I should follow the plan Dr. Lusk recommends: dilate the os and get the mass out.

I have never used morphine in the way Dr. Watkins speaks of.

TRANSACTIONS OF THE NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Meeting of May 28th, 1891.

DR. E. H. GRANDIN *in the Chair.*

DR. H. C. COE read a paper on

THE CARE OF THE BLADDER BEFORE AND AFTER LABOR.¹

DR. BOLDT thought Dr. Coe deserved great credit for bringing before the Society such an able, thorough, and exhaustive paper. Every word he had said could only be in-dorsed by each member who was familiar with the subject. He wished to call attention to a remedy for the condition known as irritation of the vesical neck. The remedy, the tincture of bryonia in five-drop doses four or five times a day, was simple and effective, but not generally known.

He was glad to hear Dr. Coe call attention to the use of the bandage during the period of pregnancy, as it was a measure that he had satisfactorily adopted for a number of years. Much subsequent trouble can be prevented by its use. He had been surprised that displacement should not be more often recognized. Many years ago Martin called attention to the very frequent posterior displacement of the uterus in the early months of pregnancy, as of such a practical bearing as to often make a diagnosis of pregnancy probable from the mere existence of this condition.

DR. HANKS said that since he had given especial attention to the diseases of women he had been led to see that very many of his former practices did not prevent subsequent disease. While one of the triumphs of modern gynecology is the successful treatment of cystocele, the understanding of the subject so ably brought before them by Dr. Coe will help mark-

¹ See original article, page 769.

edly to prevent the occurrence of this serious and troublesome condition; and if obstetricians would be a little more careful it would be prevented. It was important that patients should not strain in the recumbent posture in their efforts to evacuate the bladder. He firmly believed that most cases of cystocele might have been prevented if this precaution had been observed. Many cases of cystitis are due to the carelessness of the nurses, who should be taught to cleanse the parts thoroughly, with cotton dipped in an antiseptic solution, before each passage of the catheter; the bladder not being allowed to become overdistended, but being emptied every six or eight hours. He had no fear whatever of allowing his patient to sit up while micturating, for nine out of ten women can do it without any risk, and it is very much better than to allow them to strain and make tremendous efforts in their attempt to empty the bladder while recumbent. Dr. Goodeil had said fifteen years ago that it could and would be done, and it is always a safe procedure to adopt.

DR. CLEVELAND had always been in the habit of allowing patients to pass their water; and if it was a simple case of labor, with no tear of the perineum or application of forceps, he allowed them to get out of bed at once, pass their water, and have an injection, instructing the nurses to guard them against catching cold. He cannot remember a single instance in which he ever regretted having done so. That is the only point he wished to emphasize.

DR. MURRAY believed that all the trouble experienced from the bladder after labor came from three causes: from overdistention during the first or second stages from neglect to use the catheter to make sure that the bladder was empty; from direct pressure on the full bladder; and from septic infection from the vaginal lochia by the catheter. With regard to the first cause, he did not think it occurred often in difficult labors, but it occurred in labors that had been so easy as to be attended by midwives. In the difficult labors the physician is usually very careful to empty the bladder himself. If this is left to the nurse, and the operator applies forceps or does version, he may find to his disgust that the bladder has been full, or he has a tear that might have been avoided, or there is retention for thirty-six or forty-eight hours. All this can be avoided by passing the catheter before doing any operative procedure.

As regards the last point, one reason a nurse so frequently introduces septic material into the bladder is because there are few nurses who know how to accomplish the difficult task of passing a catheter properly and *aseptically*. The parts should be cleansed and the instrument passed by touch.

In the after-treatment there was one point he was certain

about. Dr. Goodell had said there was no danger in allowing a patient to sit up after labor, and Dr. Cleveland states that he allows his patient to get up out of bed. He thought that a very dangerous procedure to adopt. Only this week he learned from the husband of a very intimate friend of his that she was permitted to get up on the twelfth day, and died in five minutes after getting up; she had no heart disease. He thought if one were to tap a woman and take away from her an amount of fluid corresponding to that she lost at the time of pregnancy, and so relax pressure on the abdominal veins, he would be very careful about letting that patient sit up. Rather than have her sit up straight, it would be better to run the risk of catheterizing throughout the whole of the puerperium.

DR. BACHE McE. EMMET did not think it essential to empty the bladder entirely, but considered it preferable to leave a small amount of fluid in that organ, as it served as a cushion to repress the head of the child. It is just as desirable to instruct nurses in regard to the removal of the catheter as to its insertion; in hysterical cases of retention of urine they may give rise to trouble by withdrawing the catheter too quickly.

DR. ABBOTT coincided with Dr. Coe's suggestions as to the ordinary application of hot water being of no use, for he had found such to be the case in his experience. By separating the labia and applying very hot water to the meatus, contraction of the bladder could often be brought about.

DR. CLEVELAND, in replying to Dr. Murray's statements, said he did not think his argument obtained against passing water. He never heard of a patient dying from getting up on the eighth day, unless there was some good reason for it. He thought the majority of women in tenement houses rose to pass their water the day of delivery or the next day; that because one in a thousand suffered from getting up in this way was no good argument against it. Dr. Murray's patient might have died three weeks or a month later by getting up. That argument did not influence him in the least against allowing patients to get up and urinate after confinement. He would still continue the practice.

DR. MURRAY would like to add, in reply to Dr. Cleveland, that at one time he did a very large obstetrical practice in tenement houses, and, as a matter of absolute certainty, he would say that ninety-nine out of a hundred of these patients never got up to pass their water the first or second day. They do get up early afterward, and the result was that in this class of patients there was frequent uterine displacement. He had seen numbers of cases of hemorrhage from women getting up to urinate. He had seen three cases where

it came near causing death. He spoke of the case of the lady who died after getting up on the twelfth day, to prove that emptying the abdomen and relieving pressure on the veins allowed them to be suddenly filled to repletion and so could induce sudden cerebral anemia that might be fatal. If that is the case, it would be well not to let the patient get into a position where she ran so great a risk.

DR. CLEVELAND considered that Dr. Murray was entirely theorizing, as practically the point was not at all important. He had a number of friends who allow their patients to get up, and entertain the same views that he does in that respect. One reason for allowing his patients to get up is that it drains and carries away from the vagina clots which are liable to decompose if allowed to remain there.

DR. COLLYER thought it very necessary for some one to speak who had experience in the evil resulting from allowing women to sit up. He thought the physician attended too little to the condition of the uterus after delivery. His practice was to examine the uterus and bladder immediately after labor, and six hours later to make an examination of the abdomen and see whether the uterus is relaxed or the bladder full. He has had patients get out of bed to pass water, with a resulting profuse post-partum hemorrhage. He recalled two instances where the patients nearly lost their lives. This was simply due to getting up so soon after labor and standing upon their feet. He considered it productive of subinvolution, retro-displacement, and relaxation of the ligaments in general, and should be practically discouraged at the present day. The passage of the catheter ought to be avoided, if possible. Every exertion tends to relax the uterus, fill it up with blood, and then follows expulsion of the clots. If the abdomen is examined, one can determine when the uterus is relaxed, and clots may be forced out. Dr. Murray was perfectly right in not allowing a patient to exert herself after labor.

DR. EMMET said he had been in the habit, in a simple case of labor, of allowing his patients to get up a few hours afterwards. The question was one upon which opinion seemed to be evenly divided, and he could add nothing to its solution, except to say that he had been somewhat afraid to permit too much motion immediately after delivery.

THE CHAIRMAN said it had been his practice for years to allow his patients to sit up, if there were no contra-indications present, and to allow them to empty the bladder without assistance; but when it comes to allowing the patients to get out of bed the first few days after delivery, then he should hesitate to allow it. He respected a thrombus at the placental site very much, and, furthermore, he respected the ulti-

mate safety of the patient too much. If a woman is allowed to get out of bed with a heavy uterus, the probabilities are that that woman is subsequently going to undergo some operation for lifting the uterus up and taking the strain off of the ligaments. If she be allowed to get up sooner than the tenth day, he believed she is likely to have a phlegmasia dolens, though not necessarily a septic one. He had seen a slight puerperal hemorrhage develop on the seventh or eighth day. They are rare, but they do occur. He thought allowing the patient to get up might lead to undue relaxation of the uterus, and perhaps she might have a hemorrhage of a profuse type.

DR. COE, in closing the discussion, said his paper was presented in such a condensed form that he was afraid that he had not sufficiently emphasized the fact that he would allow patients to sit up in bed to urinate only in cases in which the labor had been entirely normal, and in the absence of any pre-existing complication. If the patient had a tender ovary or some form of displacement, then he would not allow her to do this. In exceptional cases he might even allow the patient to get out of bed, though not immediately after delivery. He was not quite prepared to go so far as Dr. Cleveland, but actual experience was better than theory. He regarded any danger of sudden death as extremely remote. He had seen but one case of sudden death the day following labor, from cardiac failure. In regard to the point raised by Dr. Murray, of passing the catheter by touch, he could not quite agree with him, as this might do a good deal of damage. He certainly would not pass a catheter himself by the sense of touch in such cases, and he would not expect a nurse to do it. In trying to pass a catheter by the touch one might introduce infection into the bladder through the medium of the lochial discharge, and thus cause cystitis.

DR. FLORIAN KRUG read the second paper of the evening, on

MY PERSONAL EXPERIENCE WITH VAGINAL HYSTERECTOMY.¹

DR. POLK had been very much gratified at the tone taken by Dr. Krug in the paper, the good taste he had shown in avoiding criticism of other operators, and his modesty in presenting his admirable results. Coming down to the main features of the paper, he would first of all desire to speak of the last clause, in which the doctor urges the importance of an early recognition of the disease, as being the only gateway, so to speak, to the small mortality which he has been able to obtain in his procedure. He could not understand, in the light of the more recent results that have been obtained by this operation, how such opposition should exist to its performance

¹ See original article, page 796.

to-day in the minds of a great many concerned. It certainly seemed to him that *the limits* should be underscored, for within the limits the operation was the only one to do. It is not worth while to consider any other procedure. As regards the results that have been obtained, he should like to ask Dr. Krug how soon he considers the patient to be free from the dangers of the operation. The results the doctor has obtained are open to any one who chooses to limit his operations to the class of cases in question. The moment he advances beyond that point, and operates where the disease has gone into the surrounding tissues, he brings the operation into discredit. He had operated for this disease twenty-two times, with a mortality of five; three were cases that should not have been operated upon, and in two he assigned the cause of death to his very imperfect technique at his first operations.

DR. HANKS had done the operation so infrequently that he did not consider himself competent to discuss the paper. Within three weeks he had had three cases come to him, where the disease had extended too far to allow a successful hysterectomy within the bounds set by Dr. Krug. The patients had been treated for from five to eight months for ulceration of the uterus by their family physicians, and should serve to impress upon the general practitioner the necessity of an early recognition of the disease.

DR. COE said that a year ago he took a decided stand against vaginal hysterectomy, except in cases in which the disease was confined to the corpus uteri; but his views had undergone a change since that time. He must confess that, after seeing the results that had been obtained by others, and after studying the technique of the operation, he had done a good deal of thinking. In regard to the ten cases of Dr. Krug's that he had seen last Saturday, he must say that the results were absolutely satisfactory. There was not the slightest sign of recurrence, the patients were in perfect health, and, above all, there was not that prolapse of the vaginal walls or difficulty with the bladder that he had seen in a good many cases. Nothing could be more gratifying than the results that had been obtained in these cases. His own statistics had been particularly bad, and he thought that these were due to the selection of improper cases and, in the next place, to faulty technique. He had had ten operations within the last two years, and three deaths; two of these were from intestinal obstruction, and one was due to infection, proper precautions not having been taken to prevent the escape of the sarcomatous material into the peritoneal cavity during the operation. In regard to the selection of proper cases, he acknowledged that he had not at the outset rigidly excluded those in which the parametric tissues were involved, and the recurrence in a few instances was so prompt that it clearly

showed the disease was not entirely eliminated. In order to be consistent he had not done vaginal hysterectomy since reading his paper, except where the disease was situated in the body of the uterus. He had done five high amputations, and, to be absolutely frank, in four the disease had since recurred. While he did not believe that the so-called sarcomatous degeneration of the endometrium in cases of carcinoma of the cervix had been clearly demonstrated, still he did think that the disease might creep along the mucous membrane much further than was apparent.

Now, the question arose why there had been so much opposition to this operation on the part of good men. So far as he could learn, it had been mainly due to this: In the first place, there had been in this country many hysterectomies in improper cases. Then men had done one or two operations and had reported them, the collected statistics being thus very bad. But certainly, with such improvement in the technique and the proper selection of cases as Dr. Krug had shown, the former arguments against vaginal hysterectomy lost much of their force. If some of these gentlemen had had the subject presented to them in the same light in which it had been presented to the speaker, he thought that they would change their position. He believed that there was danger from sloughing of the tissues in using the forceps, and, if he could possibly help it, he would not use them again. Once in a while one would encounter cases in which it was impossible to ligate the broad ligament at its upper portion, on account of the narrowness of the vagina, as in the case of an old virgin.

DR. JANVRIN said that it had been his custom, since his first two operations of this character, to never operate unless, after the most careful examination, he was convinced that the disease was confined to the cervix or body of the uterus. If he had any idea that the disease had progressed beyond the body or cervix, he would certainly not subject his patient to the risk of a vaginal hysterectomy. He had carried his preliminary method of preparing his patient very much after the manner suggested by Dr. Krug. He had invariably curetted and then treated the case carefully for a week or ten days, usually with the use of simple iodoform powder. He did not allow any douches whatever, but kept everything aseptic, and a week or ten days later he would do the capital operation. Where the endometrium was involved he would vary that technique. He must confess that he found vaginal hysterectomy much the easier operation to perform, and shorter than Baker's operation. He thought it a much more satisfactory operation, now that their statistics are looming up as they have been within the past two years,

and gaining such ground as they have within that time. He had never yet seen any intestinal obstruction follow any of the eleven operations he had done for vaginal hysterectomy. In these cases the summary was as follows: In the first two cases he used ligature, in seven clamps, and in the last two ligatures. Eight of these were operated upon in the hospital and three in private practice. One death occurred among the first two; another died within the past year from septic peritonitis. That case was operated upon under the most unfavorable circumstances. He used clamps, and the patient died at the end of two and a half days from septic peritonitis. Of the nine which recovered he had lost sight of only three. The first operation dates back about a year and the last about four weeks ago.

DR. BOLDT said that as yet he had no reason to change the opinion he had always held that vaginal hysterectomy was the only suitable operation, of course within strict limits. In regard to the question of sarcomatous degeneration of the endometrium, he had had the pleasure of inspecting a number of specimens of sarcomatous degeneration, and he was sure they not infrequently had circumscribed nodules of malignant disease of the fundus and also of the cervix. Very frequently the disease travels up along the mucous membrane of the cervical canal and into the body. He thought it an admirable plan to examine each and every case under an anesthetic before operating, unless everything is so favorable as to enable us to make a satisfactory examination without an anesthetic. In regard to the technique of operation, he did not think they could lay down any absolute rule. He had operated on more cases with the clamp than ligature, and his statistics are as favorable as those of Dr. Krug.

DR. CLEVELAND said that, since he commenced doing hysterectomy, he had been an advocate of the use of the clamp, and most of his operations had been done with this instrument. He had been much influenced by Dr. Krug's results. They are magnificent. His operations in future will be done by means of the ligature. The trouble in the past in hysterectomies had been due to the improper selection of cases, and a great many unnecessary operations had been done when there had been more or less fixation of the uterus, with infiltration into the broad ligament. The statistics had improved, because men were taking greater care in the selection of their cases. A year ago, when he listened to the papers of Drs. Baker and Coe, he was very much influenced by what they had to say. He had always been an advocate of the entire extirpation of the uterus. In regard to his method in using the forceps in his last few cases, he had clamped the uterine arteries, and then extending the incision almost to

the fundus, cut out a V-shaped portion. Then the fundus can be readily drawn down, because, the V-shaped portion being removed, the two sides collapse readily. After bringing down the fundus, another forceps was put on the ovarian arteries. That afternoon he had a favorable case for operation, and decided to use the ligature. He first ligated the uterine arteries, then made the V-shaped excision, then drew down the fundus and ligated the ovarian arteries, and removed the uterus very satisfactorily. The point Dr. Krug makes about disposing of the stumps is a very important one. He found he could draw them down and place them where he wanted to, and then, placing gauze around the stumps, remove the entire danger of adhesion of the intestines. Another point to be gained by removing the cervix by the V-shaped excision referred to, is that this can be really done before opening into the peritoneal cavity, by separating the peritoneum from the back of the uterus as high as possible and cutting out the V-shaped portion, being careful to hold down at the same time, with the long hook, the remaining portion of the uterus.

DR. BACHE McEVERS EMMET had not had a very large experience in vaginal hysterectomies. He had only operated upon four cases, with one death from shock twenty-four hours afterwards. He used the clamp in all his cases, and with great satisfaction, and felt that as good a disposition can be made of the stumps by means of the clamp as by ligatures. He had never had any trouble from the sloughing mass coming through, and never was there the slightest rise of temperature in any one of the cases. Large masses of slough had, however, come away. He thought the dangers of the clamps that had been cited came from the fault of their being dull.

DR. EDEBOHLS said that his experience with vaginal hysterectomy had been very limited. About a year ago he operated on four cases within a period of six months. They were all cases of epitheliomata of the cervix, and seemed favorable ones for operation. The vagina was not involved. In all of them it turned out, at the time of operation, that the broad ligaments were infected with the disease. All survived the operation, but had recurrences within a year. This had been his experience with the operation, and he had practically abandoned it since, because he failed to see cases where the disease was limited to the cervix and could be removed. At that time he saw Dr. Krug's operation, and began to get new courage. Having then a case that he considered a suitable one, he asked Dr. Krug to see the patient with him, which he did. He kindly assisted him at the operation the next day, and they found, during the operation, the cervix and tissues of

the uterus were so friable that it was impossible to hold them together, and the patient died of sepsis after thirty-six hours. Although his experience had been somewhat bad in this respect, still he was ready to operate on the next case of epithelioma or carcinoma of the uterus where he was satisfied the disease was limited entirely to the uterus. Vaginal hysterectomy is the only operation that holds out the hope of permanent cure in cancer of the uterus. He was convinced that ligature was better than the forceps, and would employ it in future cases.

DR. KAMMERER thought that, if the proper cases were selected, the operation resolved itself into one of the most simple of surgical procedures. The immediate results were very good. He had seen twenty-five performed by Professor Schröder, and had done five himself, and not one died from the operation. As compared with supravaginal amputation of the cervix, he thought total extirpation was the proper operation. He had occasion to examine, in conjunction with Professor Holtzmeier, some eighty-six of the cases operated upon by the late Professor Schröder, and there were also five or six other cases that had been operated upon, and no recurrence within from two to six years. In his five cases there was only one that had been operated on three years ago, a young woman of 28, and without a recurrence as yet. He firmly believed that some of the statistics of a year or two will still have to be modified. That does not, however, militate against the operation. He would go further than some of the gentlemen who had spoken, and would not consider slight infiltration of the ligaments a contra-indication to this operation. By combining vaginal hysterectomy with laparotomy, patients can be saved and their lives prolonged for some years.

THE CHAIRMAN wished to add his testimony as to the uniform well-being of the ten cases of Dr. Krug's that he had seen, in none of whom was there the slightest evidence of a recurrence. Furthermore, it was astonishing what a remarkable cicatrix the doctor had obtained in all his cases. It was so smooth in several instances that the finger could scarcely detect it. Certainly, to-night everything was in favor of vaginal hysterectomy as opposed to high amputation. Yet he thought there was something still to be said in favor of high amputation. Dr. Krug's experience was unique. His immediate mortality had been equalled abroad, but not his final results. If all operators could equal Dr. Krug's results as regards immediate mortality, there would be no excuse for the high amputation whatever. As he was leaving his house this evening he received a report from one of the largest institutions in this country, where during the

past year there were performed six vaginal hysterectomies, with two deaths; immediate mortality was thirty-three and one-third per cent. Four high amputations, with no deaths; mortality none. The immediate mortality of selected European operations has been five per cent. Their statistics as regards recurrence are forty-two plus per cent recurrence in one year, thirty-two or nearly thirty-three per cent recurrence after a year and a half. The high amputation, followed after Dr. Baker's method, by Paquelin or galvanic cautery, as used by Dr. Byrne, has had as low an immediate mortality rate as five per cent, and can show in the neighborhood of fifty per cent of cures after three years. While Dr. Krug's statistics are unquestionably excellent, at least four or five of these cases have not gone beyond the year and a half which is a fair test of the operation. All of his cases do not speak against high amputation and in favor of vaginal hysterectomy. These views were advanced as being the utterances of those who favor high amputation, as his experience with vaginal hysterectomy was *nil*, and until other operators should show him the statistics of Dr. Krug in suitable cases he should prefer the high operation, when done properly, to vaginal hysterectomy. One of the objections that have been brought against the high operation is the necessity of watching the patient carefully, so in the event of a recurrence she can be curetted and cauterized. Now, with vaginal hysterectomy the patient ought to be watched just as carefully. It had been proved that, though a recurrence does occur, careful cauterization prolongs life and brings about a cure. In the case of vaginal hysterectomy what had they to cauterize?

DR. KRUG, in closing the discussion, said he would like to answer first the question of Dr. Cleveland in regard to the management of the bowels. He would keep the bowels open, and give the patient some saline laxative half an hour before she is given the anesthetic. He had often found the bowels move the following day of their own accord; and if not, he would give a rectal injection as soon as possible. If the vagina was properly packed with iodoform gauze, no protrusion of the intestines could take place. Speaking of high amputation and vaginal hysterectomy, and the apparent difference in the results, it seemed strange that there should be better results obtained by partial amputation than by removal of the entire organ. He could not understand why the patient's chances should be better when something was left behind to be scraped and burned away afterwards. It seemed better to do away with it at once. The difficulties met with in high amputation were certainly greater than those met with in vaginal hysterectomy in suitable cases; and he knew cases where operators who attempted the high operation

had to remove the entire uterus, because they encountered so much hemorrhage that it could not be controlled in any other way than by taking out the entire uterus. As to the question of using clamps and ligatures, there was one more point he wished to emphasize as against the use of clamps—that in most cases the ovaries and tubes were left behind. The extirpation of tubes and ovaries was not an easy matter, if clamps were used, while by applying ligatures it was his invariable custom to remove the ovaries and tubes at the same time without difficulty.

Speaking about intestinal obstruction, he said that in his thirteenth case he was not as careful in putting in the iodoform-gauze packing as in the others, and, as a result, the stump was not well covered with the gauze. The operation was done on Friday, and on Saturday morning he went and saw the patient. There was something about her he did not like. He was so accustomed to see his patients, after a vaginal hysterectomy, in a normal manner that he was worried when he found she had been vomiting all that night. He called Saturday night again, and still found her vomiting. There was no tympanites; pulse was 112, and temperature normal. Different remedies had been tried to arrest this vomiting, but without avail. On Sunday evening, as the woman was still vomiting, he did not open the abdomen, but removed the packing of gauze, and found a loop of intestine firmly adherent to the left stump, which was not covered with the iodoform gauze. He put his finger in, and while the patient gave vent to a great scream the bowel was loosened. He again packed the wound with iodoform gauze, the bowels moved the same night, and she made a good recovery. This gave him a point in the after-treatment of these cases that was of practical value.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF CINCINNATI.

Regular Meeting, January 15th, 1891.

The President, DR. W. H. WENNING, in the Chair.

DR. THAD. A. REAMY reported a case of

GENERAL PERITONITIS FOLLOWING RUPTURE OF A PUS TUBE
INTO THE PERITONEAL CAVITY,

that he had seen in consultation with Drs. Vandyke and Hall. The patient was a married woman, 39 years old, mother of

one child now 20 years old. When he was called, the temperature was 104° and pulse 136. Both temperature and pulse had been higher. There had also, for a week previous to his visit, been extensive peritonitis, which was still well marked. The pain had been severe, and large doses of morphine had been frequently repeated. There was marked jaundice. Considerable pus had been discharged per rectum.

A blister of large size had been secured over lower portion of abdomen. The vesication had been quite severe, so much so that in many places the skin was destroyed.

As the symptoms were subsiding, and the conditions not favorable to immediate operation, especially as pus per rectum was still discharging, operation was deferred. Free purgation was secured by sulphate of magnesia. Opiates were discontinued. Improvement was rapid and continuous. At the end of five weeks she was brought to his private hospital.

On opening the abdomen he found the pelvis filled with adhesions involving the tubes, ovaries, intestines, and uterus. The left ovary had been more than half destroyed by suppuration. An abscess containing a large quantity of pus was found on left side. Its walls were made up of tube, part of ovary, uterus, sigmoid flexure of colon, and pelvic peritoneum. The fairly well-closed former opening into the bowel, at the juncture of colon and rectum, could be well made out. On the right side was a small cyst of the broad ligament, which was removed. On this side was also a hydro-salpinx. No pus. Appendages on both sides were removed. Drainage. Recovery.

Dr. Reamy had presented this case in order to sustain his oft-expressed view that immediate operation is not in all cases best.

He was satisfied that, had he operated when this case first came into his hands, death would have been the result.

DR. CHAS. A. L. REED reported a case of

ABDOMINAL SECTION FOR SUPPURATIVE APPENDICITIS,

and presented the specimen. The young lady, *æt.* 19, had previously had several attacks of pain in the right iliac region. On the 26th of January she was again taken ill, and on the 28th she summoned her physician, Dr. Edward L. Hill, of Oxford, O. He found her with excessive pain throughout the pelvis and lower abdomen—a fact which, taken in connection with the sudden suppression of her menstruation on the 25th, raised a suspicion as to complicating conditions within the pelvis. She had tympanites, a high temperature, and rapid, feeble pulse. On the 30th he wired me to come to operate for suppurative appendicitis. The patient went

upon the table *in extremis*; temperature 103.5° ; pulse 145 and feeble; sighing respiration and semi-comatose. Incision liberated a very considerable quantity of feculent pus. The pus cavity was flushed and the appendix was brought up. Near its base was an opening large enough to admit a small lead-pencil. A ligature was applied, sero-serous sutures were used, the caput and stump dropped back, a drainage tube was inserted, and the patient taken off the table in better condition than when she went upon it.

During the next twenty-four hours the tube was frequently pumped, and salines were given, with the result that the bowels were evacuated, the tympanites subsided, the temperature dropped to 99.5° and the pulse to 120. Stimulants and nutrients were pushed, but in spite of all the patient died on the eighth day. I cannot do better than give the final summary of the case in the language of Dr. Hill in a letter to me received yesterday: "So far as this case is concerned, it is not to be reckoned against the operation. There was no inflammatory action that was not controlled, no peritonitis or tenderness in the right iliac region after the operation, no difficulty as to inducing free and full alvine dejections. The intense nausea, rapid and weak pulse, hematuria, purpura hemorrhagica—in a word, sepsis pre-existent to the operation—killed, and that in spite of whiskey in ounce doses every hour, quinia, rectal alimentation by milk, Valentine's beef juice, etc."

The specimen presented herewith shows an appendix containing a foreign body, about the size of a filbert, and weighing thirty-six grains. The body is evidently a concretion which has formed around some nucleus.

DR. G. E. JONES said that the result in Dr. Reamy's case proved that he did right in deferring the operation, for there was always a possibility of infection on account of the large area of denuded tissue which had been produced by the blister. It is exceedingly hard to gauge one case by another, but thought it was good surgery to wait for developments in this case, both on account of the lesion to the skin of the abdomen and the low general condition of the patient.

DR. RUFUS B. HALL said he was particularly interested in the case reported by Dr. Reamy, as it showed the wisdom of sometimes deferring an operation; but at the same time it certainly did not prove that the result would have been unfavorable had she been operated when first seen.

He could not agree with the last speaker that the extent of the raw abdominal surface was a contra-indication to operation, but thought other reasons were of more importance, viz., the general bad condition of the patient, and that the

doctor was so near as to be easily reached and ready to operate on short notice if any untoward symptoms occurred. He indorsed this case in particular, but did not believe that any blistered surface should prevent operating, as, in his opinion, it can always be made surgically clean by the use of corrosive-sublimate solutions.

In closing the discussion DR. REAMY stated that the condition of the skin over the blister field was not the only ground of delay in operating. It was, however, a consideration, as the incision must have been made through this field, and infection could not have been well avoided. Again, the daily subsidence of symptoms proved that new infection was not going on; there was, therefore, no urgency. He also regarded the removal of tympanites under saline cathartics as an important element of safety. Then, the cessation of pus discharge per rectum, indicating closure of that gate of infection, was important.

He had, on the other hand, held himself ready during the whole period of delay to operate on call, should an aggravation of symptoms urge it.

He believed that these cases should be reported, especially as there is a disposition in certain quarters to operate at once on all patients of this class. Indeed, he had heard a gentleman in debate denounce delay as cowardly. He thought that some men lose all judgment so soon as they find that they can open the abdomen. There is such a thing as surgical sense, and at no time in the past had its exercise been more needed than now. Ignorance sometimes begets recklessness that passes for courage.

The following officers were elected for the ensuing year :

President, DR. E. W. MITCHELL.

Vice-President, DR. R. B. HALL.

Recording Secretary, DR. T. P. WHITE.

Corresponding Secretary, DR. E. S. MCKEE.

Treasurer, DR. J. L. CLEVELAND.

Regular Meeting, February 12th, 1891.

The President, DR. E. W. MITCHELL, *in the Chair.*

DR. W. H. WENNING read a short paper on

ALBUMINURIA IN PREGNANCY.¹

¹ See original article, page 825.

DR. CHAUNCEY D. PALMER reported a case of

PUERPERAL ECLAMPSIA.¹

DR. T. A. REAMY reported the following case of

DOUBLE UTERUS.

On Saturday, February 7th, I was requested by Dr. Schoolfield, of Dayton, Ky., to see, in consultation with him, Mrs. E. S., age 25, the mother of three children, the youngest child being 13 months old. The following facts were elicited:

The patient had menstruated with regularity except during pregnancy and lactation. She had now not menstruated since November 29th. Almost immediately after menstruation was missed she suffered from nausea, which continued to grow worse despite all remedies, and from the effects of which she was now much emaciated, and had for the last two weeks been fed per rectum.

January 21st Dr. Schoolfield had been called in haste. The patient was suffering intense pain in the right inguinal region, reflected through the vagina and down the direction of the crural nerve. There was evidence of marked shock, but no blood had escaped per vaginam. A careful examination disclosed a mass to the right side of the uterus, apparently attached to it, extending well up to the fundus. The doctor had no doubt of the existence of pregnancy, and he strongly suspected it to be extra-uterine; indeed, he would have insisted upon this diagnosis but for the absence of two symptoms which he regarded as important, viz., hemorrhage and decidual membrane.

At the time of my visit the patient's pulse was 130 and feeble. There had been no discharge per vaginam. On examination the bulging to the right side of the uterus was very pronounced; the os externum was patulous, but the examining finger could not be passed through the os internum, which was very firm. The mass referred to was likewise, in my judgment, too firm to justify the belief that it was ectopic gestation; moreover, its location, so near to the uterus, indicated that if it was ectopic it was probably interstitial, at least close up in the uterine end of the tube.

It was Dr. Schoolfield's opinion that it was interstitial pregnancy. As I had seen the case with a view to laparotomy, I advised waiting, since, for reasons above stated, I doubted the diagnosis. Upon consultation it was decided to give full doses of atropia with a view of arresting the nausea. Three days later, February 10th, as there was no relief from vomit-

¹ See original article, page 822.

ing, and the suspicious enlargement was more prominent and the pulse 135, I was again summoned, but, not being at home, my partner, Dr. Johnstone, saw the case in consultation with Dr. Schoolfield.

They deemed it important that the uterus be explored to settle the question of ectopic gestation. The patient being anesthetized, the uterus was explored by a Simpson's sound both by Dr. Johnstone and Dr. Schoolfield. The sound could be carried only to a depth of three and one-half inches, the uterine cavity being empty. Their belief of the existence of ectopic gestation was now strengthened. Two days subsequently, February 12th, I saw the case again. By bimanual examination I was convinced that the enlargement was of the uterus, and by Dr. Schoolfield's consent I explored the uterus by sound—of course without the use of the speculum.

At first I penetrated the same cavity which had been explored by my friends, and found the depth three and one-half inches. Withdrawing the sound I turned its concavity toward the right side, and without difficulty introduced it to a depth of more than five inches, and while it was so introduced found no difficulty, by aid of the sound and the hand externally, in carrying the uterus to the median line. The abdominal wall being very thin, its outlines could be differentiated. It was not difficult, either, to detect in this cavity a foreign body. Manipulating by the sound with the deliberate purpose of inducing an abortion, I then withdrew it and advised that the patient be kept quiet and await results.

The next day Dr. Schoolfield found the fetus, of nearly three months' growth, expelled into the vagina. The placenta, still remaining in the uterine cavity, was without difficulty removed, and the cavity washed out with a bichloride solution.

Dr. Schoolfield, now taking advantage of the dilated os internum, explored the uterus with his finger, and detected a firm antero-posterior septum extending from the fundus to a point corresponding to the ring of Bandl, thus clearing up some obscure points in the diagnosis.

The case is of extreme interest, and I record it, by permission of Dr. Schoolfield, for its bearing on this subject. According to modern teaching, in certain quarters, the fact that pregnancy undoubtedly existed, that a mass could easily be detected to the right side of the uterus, that the woman had suddenly been attacked with excruciating pain in the inguinal and vaginal regions, followed by profound shock, would have justified an immediate laparotomy. The subsequent facts showed that such a procedure would have been wholly unjustifiable.

The patient is now quite recovered.

DR. J. L. CLEVELAND was not of the opinion that leaving a patient for nine hours without medicine or attendance was ideal practice. For his part he believed in hurrying matters, and the quicker delivery is accomplished the nearer it is to ideal practice and the better for the patient.

DR. BYRON STANTON said he had had a number of these cases. He remembered lately a case in which the urine was laden with albumin, and the patient became temporarily blind, was put under treatment, and the symptoms gradually disappeared and the case went to term. Speaker believed physicians depend too much simply on test for albumin; this may be very marked and still no symptoms of eclampsia occur. In fact, the majority of pregnant women have more or less albumin at some stage of the pregnancy; its appearance does not indicate any gross disease of the kidneys, and he was of the opinion that the urine should be examined microscopically for tube casts.

DR. JACOB TRUSH said he had already reported his experience on the subject of eclampsia, but wanted to call attention to one point that is prominently mentioned by Eichhorst: that by the process of sweating the patient is only deprived of fluid, and as a consequence the solids remain in the blood in a more condensed form—that is, the blood contains relatively a larger per cent of the noxious solids—and that convulsions are more apt to occur. The same can likewise be said of tapping.

In such cases as that reported by Dr. Reamy, shock does not always mean rupture. There are cases on record in which there has been decided shock and still the case went on to full term; possibly there was the tearing of adhesions so as to produce this effect. The speaker reported at the time of occurrence a case in which there had been profound shock, which he and the consultants thought to be interstitial pregnancy, and electricity, both faradic and galvanic currents, was used. The patient became better, and the uterus, which had heretofore been decidedly lopsided, became straight and symmetrical. Three months later she passed a little blood, and finally expelled a three months' fetus, all shrivelled up, showing it had been dead for a long time.

DR. JOHNSTONE said that he had never used *veratrum viride*; that it certainly was not suited to all cases, for he had seen some in which its use would be dangerous. In his opinion, and according to his experience, the ideal method of treatment was to deliver as soon as possible.

Dr. Johnstone said, with regard to the case reported by Dr. Reamy, that as he had seen the case and examined it carefully, he could substantiate all Dr. Reamy had said.

He had tried to pass the sound some distance in the

median line, but could not get it to pass into the right side. It was his opinion that his attempts had brought the uterus itself more in the median line, and brought on contractions, and for that reason the sound on second trial entered more easily.

This case brought to mind a case he had in Kentucky which in some respects resembled this, the principal difference being the amount of pain and regular uterine contractions which were associated with this one-sided condition of the uterus. No shock, however, was present. On this account he kept his grip packed, expecting to be called to a rupture, but suddenly the pains stopped and the case went to full term. There was evidently some uterine contraction, by which at least the fetus was forced down to a comfortable place, and then the case assumed a natural course.

DR. THAD. A. REAMY said he had been much surprised to note that in Parvin's last edition (a work which he considered a very able one) but little was said as to the value of *veratrum viride* in the treatment of puerperal eclampsia. It was evident, he thought, that this distinguished author has but little confidence in the agent. As for himself, he regarded it as more potent for good, in many cases of this disease, than all other agents combined. The speaker had during the last fourteen years, both in his clinical and didactic lectures, not hesitated to recommend this agent in the highest terms.

Whatever view may be taken of the etiology of the disease (and of course different views are entertained by equally able authorities), the patient in fatal cases usually dies in a comatose state. The immediate cause of this coma is cerebral congestion—which is the product of the convulsions—the arrest of respiration, and the partial arrest of blood flowing from the brain through the jugulars. In many cases, when convulsions continue, serous cerebral effusion occurs. The speaker would therefore insist upon the proposition that no matter what the predisposing cause or causes in a given case, the most imminent danger lies in the convulsions themselves. It follows, therefore, that any remedy which will promptly, and with tolerable certainty, control the convulsions is of great value. No remedy can control all cases, but under doses of twenty to forty drops of Norwood's tincture, given per os, and repeated if necessary; he had seen the most violent attacks cease as if by magic. He had not hesitated to follow a thirty-drop dose by twenty to twenty-five drops every thirty to sixty minutes until the pulse rate was reduced to forty or fifty per minute.

When this profound influence upon the heart's action is secured, convulsions will ordinarily cease. Of course, all understand the action of the drug, most powerfully lessening

the reflex irritability of the spinal cord and medulla. It acts not only upon the cardiac ganglia, but directly upon the heart itself. The blood pressure is markedly decreased.

Should the depressing effect of the drug become alarming, the patient can be speedily rescued from these effects by a dose of brandy, or a small dose of morphia hypodermatically. He stated that the veratrum would act promptly within twenty minutes when given by the mouth, hence its hypodermatic administration is not necessary. The speaker had also obtained excellent results from hypodermatic injections of morphia, controlling the convulsions in certain cases. He had found this agent to act best in patients of a marked nervous temperament with dilated pupils. In such subjects he preferred morphia to veratrum.

He had employed the lancet in certain cases until he entered upon the use of veratrum; never since, however.

The speaker must express his surprise that in most of the modern text books, as well as by some of the speakers this evening, chloroform is still lauded as a valuable agent for controlling the convulsions. For many years past he had neither used nor recommended this agent. Formerly he employed it because it was almost universally recommended, but it had uniformly disappointed him. He believed its action to be injurious. It is not a spinal depressant; moreover, its secondary action is sometimes irritating to the kidneys.

Not so, however, with chloral, which he considered a valuable remedy, especially when given per rectum.

He would not discuss the etiology of the disease further than to say that it cannot be uniform. In his opinion the causal relation between renal disease and eclampsia, although not now regarded with so much importance as a few years since, is still overestimated; and yet such relation cannot be wholly denied. His own clinical observations convinced him that, barring cases of chronic Bright's disease in pregnant and parturient women, the albumin found in the urine of an eclamptic woman is more often the result of the convulsions than the cause.

He had no doubt of the importance of pressure as an indirect cause of albumin. Any degree of pressure that will result in venous congestion may cause albumin in the urine, and, if continued, may cause uremia.

The speaker regards the views of Lantois (*Archiv. f. Gyn.*, vol. xiii.) as quite plausible, viz., that the disease is acute peripheral epilepsy. The albuminuria and eclampsia having a common origin, irritation of the uterine nerves is reflected to the kidney and acts upon their vaso-contractors, and thence albuminuria; or upon the medulla, and convulsions result (Parvin).

REVIEW.

THE DAUGHTER: HER HEALTH, EDUCATION, AND WEDLOCK.
By WM. M. COPP, M.D. 140 pages. Philadelphia: F. A. Davis, 1891.

This little work is intended to aid the mother in the physical, moral, and mental training of her daughter, and discusses in an easy, satisfactory, practical, and entirely unobjectionable manner points of general interest in the cycle of infancy, girlhood, wifehood, and maternity. The subject of reproduction is touched upon "neither haltingly nor too explicitly." "A certain amount of information in regard to it is needed to keep from errors and blighting mistakes, often committed purely through ignorance which should have been dispelled." . . . "The subject is obviously not one for promiscuous discussion, but nothing is gained in private by veiling it with mystifying reserves and ingenious evasions which serve often to keep smouldering an unsatisfied curiosity that had better be laid at rest by a little necessary plain and wholesome truth." The author would make the mother, as she should be, the daughter's safest and most trusted guide.

ABSTRACTS.

1. FEHLING, H.: THE CAUSES AND TREATMENT OF PUERPERAL OSTEOMALACIA (*Archiv für Gynäkologie*, Band xxxix., Hft. 2).—The results in cases of puerperal osteomalacia have heretofore been exceedingly poor. According to Litzmann's and Hennig's statistics, eighty per cent of the cases died. Cesarean section (Porro's method) gave better results than any other plan of treatment. According to Baumann, of forty-four cases of osteomalacia who were delivered by this method, twenty-six recovered. Of these twenty-six, five died from other causes, such as heart disease, nephritis, and tuberculosis, leaving twenty-one cases who made excellent recoveries. These results led F. to believe that the removal of impregnation and nursing effected a cure, and, arguing from

this, he decided to observe what effect would result in these cases by removing the ovaries. He operated upon fourteen cases in all, one of which died, the others made an excellent recovery. From the large number of cases occurring in this district we would consider the disease as epidemic in Basel. In examining the histories of these cases that were operated upon, we find that their ages varied between 28 and 51; that they had all borne children, from 4 to 10, average being 5.4. The social condition does not seem to have any effect upon the acquiring of the disease, nor does long nursing.

According to these results, there can be no doubt that by performing oöphorectomy, and thus putting an end to ovulation and menstruation, a cure for osteomalacia can be accomplished. Other observers have obtained similar results, so that the total number of cases has now reached twenty.

As to the causation of the disease we are still very much in the dark. Some believed the disease to be due to a bacterium, and its epidemic character would make this seem plausible. But if such were the case, how could we explain the method of cure by means of removing the ovaries or by Porro's operation? Diminished alkalinity of the blood has also been given as a cause. Experiments were made upon the patients to test this. The results would not lead one to believe that this could be the cause. The diminished alkalinity merely shows the severity of the disease.

Certain positive factors in the disease are: Firstly, that nearly all the cases were markedly worse when menstruating. This would lead us to suppose that the menstrual congestion stood in a certain relation to the disease. This is also confirmed by the fact that the disease occurs more frequently during pregnancy and in the puerperal state. Secondly, the marked diminution of the pains shortly after the operation. Two or three days after the operation the pains in the sternum and ribs cease, then later on those in the pelvis and lower limbs also disappear.

The result of these observations leads us to believe that the disease is due to a diseased increased activity of the ovaries. The changes in the bones are to be looked upon as reflex. According to this, we must look upon osteomalacia as a trophoneurosis of the bones, especially of the pelvic bones, this trophoneurosis depending upon the generative process, especially in the ovaries.

L. S. R.

2. JOSEPH RHEINSTEIN (Berlin): THE DIAGNOSIS OF NON-PUERPERAL OVARIAN ABSCESES (*Archiv für Gynäkologie*, Band xxxix., Hft. 2).—Acute non-puerperal inflammations of the ovaries are extremely rare. Pathologico-anatomically considered, there are two forms of inflammation of the

ovaries--the parenchymatous and the interstitial. The first form occurs in acute exanthemata, typhoid fever, recurrent fever, cholera, septic processes, phosphorous and arsenical poisoning, and has merely an anatomical interest; for clinically it produces no characteristic symptoms, and is only discovered at the post-mortem table. The second form occurs very rarely; except after the puerperal state and in the beginning of the disease, the diagnosis is extremely difficult, for the symptoms could be considered as due to a perioöphoritis or a localized peritonitis. According to Olshausen, a positive diagnosis of acute öophoritis can only be made when we can feel the enlarged ovary, and can be sure that the pain arises from it and that none of the surrounding organs are affected. Even then we cannot be sure, but, in order to be so, have to perform a laparotomy, or we make our diagnosis at the autopsy. The total number of cases that have been published being very few, the following case is cited in order to show the difficulties in making a diagnosis:

A blonde, single, 23 years old, gave the following history: Menstruated regularly from her sixteenth year on. In June, 1888, had an abortion in the tenth week; does not know the cause. After that she had a discharge which lasted six weeks. Following this menstruation began again and continued to be regular. From September to November, 1889, she had a severe attack of acute articular rheumatism. Had a leucorrhæal discharge during this entire attack. In the beginning of February, 1890, she was suddenly taken with a chill and fever; began to menstruate and had slight drawing pains in the left side of her abdomen. A physician who saw the patient diagnosed peritonitis. The pains became more severe and finally became cramp-like in character, extending from the left side toward the right and into the back. Complained of slight burning when urinating. Last menstruation March 22d, lasting four days. Six days later a severe hemorrhage, lasting three days. Complains continually of pressure upon the bladder, and is compelled to urinate very frequently. Has very little appetite. Temperature below normal, rising in the evening to 38.7°. Abdomen tense and retracted. Pressure upon the abdomen is not painful. By external palpation nothing can be made out. Uterus not enlarged; sharp anteflexion; freely movable. The right ovary, the size of an almond, can be easily felt. On the left side a tumor is felt, as large as an apple, and is attached to the fundus uteri, but can be separated from it. The consistence of the tumor is firm, but in several places soft spots can be felt. The tumor cannot be moved. The left ovary cannot be felt. A diagnosis of purulent tumor of the uterine

adnexa was made. Whether it was of the tube or ovary remained a doubtful question. As the tumor had weakened the patient, and made her unfit for work, and caused considerable pain, it was decided to perform laparotomy. This was done on April 14th. Abdominal incision began at umbilicus and extended to three centimetres above the symphysis. Intestines came into view and were pushed to one side. Then on the left side the tumor became visible. It was surrounded by peritoneum, and was adherent to a loop of small intestine. It was loosened with considerable difficulty. In endeavoring to draw it out of the pelvis it burst, and the contents, which were greenish-white pus, about three tablespoonfuls in all, were evacuated into the abdominal cavity. It was carefully wiped away with sponges. That portion which was adherent to the intestine could not be separated without tearing the latter; it was therefore left behind and the rest removed. The tube was ligated at the uterine end, and was also removed. Abdomen carefully cleansed and the wound closed. No reaction occurred until the tenth day, when a small superficial abscess of the abdominal walls was developed. This lasted eight days. On the 10th of May the patient was discharged cured. Microscopically, portions of ovarian stroma were found in the abscess membrane. From the history the probability is that the abscess was due to a gonorrheal infection. It would have been impossible in this case to tell whether it was a pyo-salpinx or an ovarian abscess. It could also have been mistaken for a hydro-salpinx, hemato-salpinx, tubo-ovarian cyst, and tuberculosis of the tubes. A hydro-salpinx has rather a characteristic form. Beginning at the uterine end, it swells as it goes out toward the side. The affection is usually bilateral. The amount of pain is very slight and there are very few symptoms. It is utterly impossible to diagnose a tubo-ovarian cyst if it undergoes suppuration from the disease in question. The same is true in cases of tuberculosis, when cheesy masses form. It may also be difficult to diagnosticate the disease from a parametritis or an intraperitoneal pelvic exudation. The cause of the interstitial form of the disease is usually suppressio mensium or else gonorrheal infection. The former cause is a rare one. The symptoms in the case just described pointed to gonorrhea as the cause. The yellowish discharge, the burning and frequent desire to urinate, all point to this as the source.

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ORIGINAL COMMUNICATIONS.

IMPERFORATE HYMEN.

BY

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(With cut.)

MARCH 27TH, 1891, I was called to see Miss F. L., aged 19 years, on account of severe abdominal pain. She was one of eight children, born in this country of English parents. Had been generally healthy. Family history good, but I was informed that a sister of her father "went into quick consumption as the result of not having her monthlies come on." The mother of my patient began to menstruate at 13 years of age; has lived a very active life, and always has been well and strong, though I found a mitral regurgitant bruit with occasional irregular cardiac action. Two sisters of my patient are now living, aged respectively 13 and 15 years. The older of these entered the life of woman at the age of 14 years and 9 months. The younger sister shows evidences of soon beginning to menstruate.

At the age of 16 my patient began to have trouble with her eyes. Her mother thought that it was due to delay in menstruation, but the family physician thought otherwise. In January, 1890, she had the grippe. Since she did not seem to improve satisfactorily after it, at the request of her mother the family doctor gave her a prescription for emmenagogue pills. These had a decided effect upon the bowels, producing very free discharges, but otherwise they seemed to have no influence. The family and the doctor therefore concluded that Nature was not ready for her to menstruate, and she was let alone. From this time her bowels began to be more and more sluggish.

During the summer she felt, in the main, quite well. She played tennis without special inconvenience, further than occasional pain in the region of the heart. This pain she had noticed upon special exertion ever since she could remember.

In December, 1890, her mother laughed about her "growing so stout." Shortly after that remark the patient noticed that there was a tumor in the lower portion of her abdomen. So slowly had it developed that it was already large before she realized that there was anything abnormal about her. In January, 1891, she began to have difficulty in passing urine. She had frequent desire to urinate, but could pass only a small quantity at a time.

February 26th, on account of a "heavy feeling in her abdomen," pain in the small of the back and on the inner side of her thighs to her knees, the family doctor was sent for. After an examination of her abdomen he pronounced her pregnant. So strongly did the patient deny the possibility of such a condition that the doctor attempted a vaginal examination under cover. He passed the distal phalanx of his forefinger, as he supposed, into the vagina. He there found so much resistance that he desisted. He informed me that his finger was grasped by spasm of the muscles. He could get no evidences of intra-uterine life, and so advised the delay of a month for developments. He advised that if by that time the diagnosis did not become clear they should consult a gynecologist.

Her bowels became quite constipated. The peculiar pain went away, but returned four weeks later. March 26th she

was no longer able to pass her urine. That night they again went to their family physician. He urged them to consult a specialist in the morning. Being unable to go to the house at the time, he gave them a catheter and instructed them how to use it. They used it successfully, and in the morning sent for me.

I found by questioning that for some time she had noticed periodical pain, slight and located in small of back and in region of bladder. How long since it began she could not say. Of late this pain had grown more and more severe, but was entirely absent between periods. She seldom had a headache, and what headache she had she did not attribute to suppressed menstruation. She had had no disturbance of vision for the past two and a half years. For the past month her mother noticed that she lacked vivacity and "seemed to be going into a decline." She did not sit squarely upon a chair, but gradually had acquired the habit of sitting upon one buttock, as though she had hemorrhoids. This position had been more marked for the last month. She had frequent desire to go to stool, but could accomplish little. She most emphatically denied the possibility of her being pregnant, but said that the sense of fulness in the vulva had led her sometimes to roll up a sheet and rub herself. This rubbing seemed to give her relief and was followed by a discharge of mucus.

The patient was evidently in much pain. There was no fever. The pulse was slightly accelerated but regular. There was a pear-shaped tumor, with the large end extending to or slightly above the umbilicus, and the small end in the pelvis. The tumor was symmetrical and in the median line. In the upper left quadrant I discovered a slight projection which gave the impression of a child's foot. The tumor felt as though it contained fluid, but its walls were tense. It certainly seemed as though the girl was at least four and a half months *enceinte*. I could, however, hear no fetal heart, nor find other signs of intra-uterine life.

The floor of the pelvis was next examined ocularly. It strongly resembled a case of confinement with a large bag of waters unruptured and presenting at the vulva (see figure, p. 900). The perineum was very strongly depressed and the anus

bulging and with tendency to hemorrhoids. In an ordinary confinement the distention of the perineum is produced by the head of the child, which is hard. The result is that the entire perineum is pushed forward. In this case, since the distention was caused by intravaginal fluids, the posterior segment of the perineum, from the coccyx to the anus, was but slightly stretched, thus causing the anus to be relatively displaced backward. The labia majora were swollen and parted about two and a half inches, and between them there projected a pale membrane, which I recognized as the hymen. There was no opening through the hymen, so that I



concluded that the family physician had attempted to pass his finger into the meatus urinarius. Palpation of this membrane clearly demonstrated the presence of a fluid behind it. Rectal examination demonstrated a fluctuating tumor, anterior to, and pressing upon, the rectum, almost causing its occlusion.

The diagnosis was, therefore, imperforate hymen, causing the retention of the menstrual fluid for several years—probably at least three—thus distending the vagina, uterus, and left Fallopian tube. The only treatment to give relief would be surgical.

At 10:30 A.M. at the time of my first visit, I therefore punctured the hymen with an aspirating needle, and drew off

about two ounces of thick dark fluid, *without special odor*. The fluid was so thick that it flowed but very slowly through my largest needle. I used no anesthesia, general or local. The great pressure upon the hymen had rendered other anesthesia unnecessary. The character of the fluid, together with the general condition of the patient, indicated that there was no occasion for special haste.

With a small knife I made a linear vertical incision, three-sixteenths of an inch long, near the fourchette. This permitted quite a stream to flow. I directed that no dressings be put over the vulva, for they would interfere with and prevent the discharge. So long as there was a continued outward flow there would be little danger of the entrance of bacteria through a small opening. I ordered that the patient be kept upon her back, and that as fast as the cloths under her became covered (for they could absorb but little) they should be removed and fresh ones substituted. With each change of cloths the vulva was sponged with a weak carbolized solution. To guard against a possible malarial complication I prescribed quiniæ sulphatis, gr. ij., to be given before each meal.

At 4:15 the tumor was decidedly smaller. Had urinated, and had had a free action of the bowels. She complained of pain in the small of the back. The discharge had nearly ceased, because, the pressure having decreased, the hymen had contracted and nearly closed the opening. With the knife I enlarged the opening to its former size.

March 28th, 10 A.M. Slept well; no pain; bowels and bladder free; no fever; pulse 70, full and soft; tumor nearly gone. Dilated the opening with dressing forceps. At 4 P.M. the discharge had nearly ceased. I dilated the opening and washed the cavity with a carbolized solution. All water used in injections or for external washing was first boiled.

March 29th, 9 A.M. The vulva was externally normal in appearance. Rectal examination showed tumor gone. Perineal body thick and unusually firm. I stretched the opening until I was able to pass my index finger. I had mentally compared the condition to a confinement. I was therefore surprised to find the uterine cavity continuous with that of the vagina, the only means of distinguishing the cervical from

the vaginal wall being that the cervix was firmer. Since the discharge had ceased, I directed that an antiseptic pad be applied over the vulva. The intravaginal injections were used twice a day from March 29th to April 2d, inclusive. From April 3d to 29th one daily injection was used. There was no color to the wash March 31st. Patient was allowed to sit upon chamber after first day. Sat up on the ninth day.

Menses appeared April 30th, natural in quality, but slightly abundant, according to the mother's testimony. Discharge contained some shreds of membrane, such as the mother had often noticed in her own flow. Patient had some pain in the back, but otherwise felt well. Flow ceased May 7th. I received reports, but did not examine patient from April 11th to May 12th.

May 12th. Distinct mitral regurgitant bruit. Heart regular, but pulse slightly dicrotic, 70 per minute. Says she feels well. Since last visit has used the injection herself. Thinks the opening has grown gradually larger. At my last attempt the index finger was passed with difficulty and caused considerable pain. Now it was passed with comparative ease, and practically without pain. The hymen had atrophied in thickness. When distended, before puncture, it was about one-eighth of an inch thick. Two days later, tension having been removed, it was three-eighths of an inch thick. Now it was less than one-eighth of an inch.

The walls of the vagina were still abnormally relaxed and thickened. The uterus was normal in position and size. The cervix was not as hard as we usually find in a virgin. Otherwise normal.

From the day of the operation there was no chill, fever, odor to the discharge, or other unfavorable symptom.

I have been led to report this case fully for several reasons. Text books upon gynecology say very little of the operation or its dangers. Some do not even mention it, and yet I find a mortality of nearly ten per cent following it. Hewitt recommends evacuation *guttatim*. Thomas favors the slow method. Emmet, on the other hand, advises a free incision, and a large majority of cases reported are those of rapid evacuation. Skene, in his excellent work on "Diseases of Women" (1890, p. 53), says of the rapid as compared with the gradual method:

"This method has proved to be safer since the days of anti-septic surgery, and may be adopted." I have seen no satisfactory and thorough discussion of the operation. Many of the articles in text books and journals are misleading. It seems to me, however, that both theory and experience strongly favor the gradual method.

As a basis of study, I present, on pages 904-907, two tables of eighty-one cases. A few of these I have taken from reviews, and not from the original publications. From these tables I have excluded, for example, two fatal cases of rapid evacuation mentioned by Thomas,¹ because he does not give the full number of cases operated upon. Both of his cases died of septicemia. I have included a few cases in which the occluding membrane was not the hymen, but was situated close to the hymen. Several reports found do not state whether the patient died or recovered. The list is very incomplete, but is probably extensive enough for present purposes. Of this number, twenty-five were operated upon by the gradual method, with one death, four per cent. Out of fifty-six cases rapidly evacuated, seven died, or 12.5 per cent. Since, perhaps, in Shapard's case death was not due to the operation, we might say six died, 10.7 per cent. The method, whether rapid or slow, in Shapard's case² was not clearly stated. It was done through a canula, and yet the wording leads us to suspect that it was rapid. Lamargue's case³ is here classed as rapid, though I may be in error in so placing it. It must be remembered that Simpson's case occurred before the days of anti-septics, and that it died of septicemia. Unless it be Shapard's case, the writer has not found the record of a single case of death following gradual evacuation since the days of anti-septic surgery. Shapard's case was in a critical condition before the operation was performed. She was 36 years of age.

The majority of reports do not give all the data that might be desired. Few, for example, mention the thickness of the hymen. One of the diagnostic points sometimes mentioned is a dark violet or purple hymen. Since this color is due to

¹ "Diseases of Women," 1878, p. 64.

² Nashville Jour. Med. and Surg., New Series, vol. xxvi., 1880, p. 153.

³ Jour. de Médecine de Bordeaux, August 17th, 1890.

TABLE I.—RAPID EVACUATION.

Reporter.	Where reported.	Number of cases.	Retention of urine.	Washed out at once.		Second incision.	Recovered.	Died.	Complications.—Remarks.
				Yes.	No.				
Cook.....	Mellificium Chirurgiae, 1647.....	1	.....	(?)	...	..	1..	1..	First case of which I find a record of operation.
Goodrich.....	Amer. Jour. Med. Scien., vol. vii., 1830, p. 265.	1	.....	...	1	....	1..	1..	
Baldwin.....	Amer. Jour. Med. Scien., vol. xx., 1837, p. 265.	1	Dysuria.	...	1	....	1..	1..	
Davis.....	Medical Times and Gazette, Dec. 19th, 1868...	1	.....	1	...	....	1..	1..	
Phillips.....	Medical Times and Gazette, Dec. 19th, 1868...	1	.....	...	...	....	1..	1..	1 Peritonitis.
Hall.....	Medical Times and Gazette, Dec. 19th, 1868...	1	.....	...	...	....	1..	1..	Escape from tubes.
Yates.....	Lancet, June 11th, 1870.....	1	.....	...	1	....	1..	1..	
Martinez y Molina (?).	Anal. de Gyn. Españ. Noted in Med. and Surg. Rep., vol. xxxvi., 1877, p. 312.	1	1	...	1	....	1..	1..	1 Septicemia.
Emmet.....	Diseases of Women, 1879.....	4	.....	4 (?)	...	....	4..	4..	
Glaister.....	Glas. Med. Jour., November, 1880.....	1	Dysuria.	1	...	....	1..	1..	
McCallum.....	Can. Med. Surg. Jour., January, 1880.....	1	Dysuria.	1	...	....	1..	1..	Second operation. First opening closed.
Davies.....	Obst. Jour. Gr. Brit. and Ireland, vol. viii., 1880, p. 467.	1	1	....	1	....	1..	1..	
Hurd.....	Peoria Med. Month., vol. ii., 1881, p. 131.....	1	.....	...	1	....	1..	1..	"Not well developed uterus" (?)
Shapard.....	Nashville Jour. Med. and Surg., N. S. vol. xxvi., 1880, p. 153.	1	.....	...	...	....	1..	1..	136 years old; seven gallons. "Death from exhaustion or low peritonitis."
Mossman.....	AMER. JOUR. OBST., vol. xiv., 1881, p. 565....	1	1	1	...	....	1..	1..	Died eighth day. Septicemia. Flu-id would not flow through one-half inch opening.
Moore.....	St. Louis Clin. Record. Noted in Med. and Surg. Rep., vol. xlvii., 1882, p. 609.	1	.....	1	....	....	1..	1..	
Latimer.....	Brit. Med. Jour., June 28th, 1884.....	1		1			1..	1..	Epilepsy and septicemia.

Page	Lancet.	Noted in Weekly Med. Rev.	Obst. and 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TABLE I.—Continued.

Reporter.	Where reported.	Number of cases.	Retention of urine.	Washed out at once.		Second Inclusion.	Recovered.	Died.	Complications.—Remarks.
				Yes.	No.				
Sylvester.....	Maryland Med. Jour. Referred to in Annual U. M. S., vol. iv., 1888, p. 130.	1	.....	.....	.....	..	1	..	
Cullingworth ..	Med. Chronicle. Referred to in Annual U. M. S., vol. iv., 1888, p. 130.	1	.....	.....	1	..	1	..	
Howard	N. O. Med. and Surg. Jour. Referred to in Annual U. M. S., vol. iv., 1888, p. 130.	1	.....	1	.....	.....	1	..	
Total		56	.....	.....	.....	..	49	7	12.5 per cent fatal.

TABLE II.—GRADUAL EVACUATION.

Reporter.	Where reported.	Number of cases.	Retention of urine.	Washed out at once.		Second Inclusion.	Recovered.	Died.	Complications.—Remarks.
				Yes.	No.				
Denman.....	Quoted by Dewees in Diseases of Females, 1828, p. 39.	1	.....	.....	.....	1	1	..	
McCauley	Quoted by Dewees in Diseases of Females, 1828, p. 40.	1	1	.....	.....	1	1	..	Mistook hymen for membranes in labor. Quoted from Smellie, Col. i., No. 1, Case V.
J Y. Simpson..	Diseases of Women	1	.....	.....	.....	.....	.....	1	Septicemia.
Metcalf ..	Amer. Jour. Med. Scien., New Series, vol. xii., 1846, p. 139.	1	Dysuria.	.....	1	.....	1	..	
Copeman	Med. Times and Gaz., December 19th, 1868.	1	.....	.....	.....	.....	.....	1	
Drysdale.....	Lancet, December 11th, 1869.....	1	1	.....	.....	8 days..	1	..	Severe peritonitis.
Bailey	Boston Med. and Surg. Jour., vol. xciv., 1876, p. 270.	1	.....	.....	1	.....	1	..	

G B. Walker..	Chicago Med. Jour. and Ex., vol. xxxvi., 1878, p. 166	1	1	....	1	....	1	....	1	Three quarts.
L. W. Atlee....	Amer. Jour. of the Med. Scien., vol. lxxii., 1881, p. 136.	1	.....	....	1	....	1	....	1	
Shelly	Med. and Surg. Rep., vol. xxxiv., 1876, p. 349.	1	1	....	1	1 1/2 mos. later.	1	1	1	
Bertheraud ...	Med. and Surg. Rep., vol. xxxiii., 1875, p. 198.	1	1	...	1	...	1	1	1	First opening closed. Used sponge tent in second.
J. M. Duncan ..	Trans. Obst. Soc. of London, 1882, p. 213.	1	...	....	1	.....	1	.....	1	Fifty ounces of fluid. Membrane close behind the hy-men.
Pinkney	AMER. Jour. Obst., vol. xix., 1886, p. 481.	1	.....	1	....	1	....	1	1	Aspiration.
Meek.....	Jour. Amer. Med. Ass'n, vol. vii., 1886, p. 349.	1	1	..	1	2 weeks later.	1	2 weeks later.	1	
Sisman	Wiener klinische Wochenschrift, June 5th, 1890.	3	.....	..	....	.....	....	.....	3	Drainage tube.
Sykes.....	Brit. Med. Jour., April 19th, 1890.....	1	.....	....	1	6 days..	1	6 days..	1	Two quarts Operation by Mr. John Lucie Smith. Published in Duncan's Annals of Medicine for 1897, vol. ii., p. 331.
Weller.	Daniel's Tex. Med. Jour., vol. iii., 1887, p. 1.	1	... ..	..	24 hours later.	Next day.	1	Next day.	1	13 years old. One quart.
Atthill	Diseases of Women, Amer. ed., 1879, p. 51.	1	.....	....	....	1	....	1	1	
Tait ..	Brit. Med. Jour., April 5th, 1890.	4	..	....	....	....	....	....	4	
Hemenway.....	AMER. Jour. Obst., vol. xxiv., 1891, p. 897.	1	1	....	1	Next day.	1	Next day.	1	One gallon fluid.
Total.....		25	.....	....	.....	.....	.....	.....	24	Four per cent fatal.

the fact that the retained fluid is seen through the hymen, we must conclude that the hymen is thin. One operator spoke of puncturing the membrane with his finger.¹ On the other hand, I find records of cases where the hymen was one-fourth or three-eighths of an inch thick. Another says that the hymen was five-eighths of an inch thick.² In my case the membrane appeared white and glossy, and was one-eighth of an inch thick when distended. When a portion of the contents had been evacuated, the surface of the membrane had a reticulated appearance, as though it were strengthened by a net with one-fifth inch meshes. This reticulated appearance disappeared in a few days.

Cases have been known to exist for ten years, and in one at least sixteen years; but they often prove fatal in two years, according to the older writers.

As nearly as I could estimate, there were about one hundred fluidounces of retained fluid discharged before an injection was used. J. Matthews Duncan³ reports a case in which fifty ounces were discharged. His case was not strictly imperforate hymen, but the menses were retained by a membrane just back of the hymen. Benevoli, quoted by Burns, and mentioned by Dewees in his "Diseases of Females," speaks of a case in which thirty-two pints were evacuated. Ghent reports a case⁴ in which seventy-six ounces were evacuated. Wiggin's case⁵ discharged three pints, and was up and at work the next day. In another case⁶ two quarts were evacuated. A girl of 13 years⁷ discharged a quart. The most remarkable case of which I have seen a record is that of Shapard.⁸ His patient, a woman of 36 years, was relieved of *seven gallons*, according to his report. She died a few days later, "of exhaustion or a low form of peritonitis," he could not tell which.

I have not found mentioned the peculiar position which my

¹ Hurd, in Peoria Medical Monthly, vol. ii., 1881, p. 131.

² Bigelow, Medical Record, vol. xxxiv., 1888, p. 704.

³ Transactions of the Obstetrical Society of London, 1882, p. 213.

⁴ Tex. Cour. Rec. Med., vol. iv., 1887, p. 310.

⁵ Med. Record, vol. xxxvi., 1891, p. 136.

⁶ Maryland Med. Jour., vol. xxiv., 1891, p. 248.

⁷ Daniel's Tex. Med. Jour., vol. iii., 1887, p. 1.

⁸ Nashville Jour. Med. and Surg., N. S., vol. xxvi., 1880, p. 153.

patient assumed when sitting. Such a position ought to be suggestive to the practitioner. Retention of urine, dysuria, and constipation are frequently observed, especially in cases of long standing.

The dangers in an operation are: First, poisoning; secondly, rupture of Fallopian tubes; thirdly, peritonitis, the result of sepsis, regurgitation, or rupture.

So long as the hymen is unruptured there is little danger of sepsis. The fluid is not, as a rule, septic, though I find a few records of such cases.¹ So soon as it is exposed to the air it rapidly decomposes. Formerly the greatest danger seemed to be from sepsis. This danger is greater if the opening is large. It is impossible for the uterus to contract rapidly in these cases. If, therefore, the contents are rapidly evacuated, air must take the place of the fluid, especially since for a rapid evacuation the opening must be large. To guard against sepsis, injections have been used, but these are not without danger. M. Berger reported, in December, 1885, to the Société de Chirurgie² the case of a young lady of 20 years upon whom he had operated for a tumor about the size of the one here reported. After evacuation he used every three hours a one to one thousand sublimate solution. On the fifth day symptoms of mercurial poisoning necessitated a change. Personally I am opposed to the frequent washing of the uterus in such cases. The tendency seems to be to macerate the tissues, thus favoring sepsis. In general surgery it is found that cleanliness does not necessitate free use of water, nor does free use of water generally favor a rapid healing of the injured parts. A limited amount of washing is necessary to thoroughly cleanse the parts. Externally, the use of antiseptic washes I believe to be necessary.

In order to hasten evacuation through a small opening, the cautious injection of water might be used. In Mossman's case³ a large opening was made because the fluid would not

¹ See Howard's case, reported by O'Donovan, *Med. News*, vol. 1. 1887, p. 457. It is not improbable in such cases that there might be a minute opening into the rectum or through the hymen sufficient to allow access of germs.

² See *Revue de Thérapeutique Médico-Chirurgicale*, January 1st, 1886, p. 13.

³ *AMERICAN JOURNAL OF OBSTETRICS*, vol. xiv., 1881, page 565.

flow through a half-inch opening. If that half-inch opening had been carefully held open by a drainage tube, after scooping out a little of the jelly-like substance with a spoon, if necessary, it seems highly probable that the injection of a little carbolized water from time to time would have secured complete evacuation without the dangers of a large opening. His case died on the eighth day of septicemia. The same treatment is indicated when the fluid is already septic, as in O'Donovan's case.¹ For this use I would recommend a sublimate solution of one to one thousand until the uterus is nearly empty. Great care must be used in such cases not to cause regurgitation through the Fallopian tubes. As a safeguard against this, I should advise that the drainage tube be made of glass, with two unequal canals. The smaller passage should be used for the injection, while the other—at least twice as large—should be utilized for the discharge.

Pressure upon the abdomen should not be used to hasten the flow. It increases the risk of an accident, like rupture of, or regurgitation through, the tubes. In one case such pressure was made by a couple of meddling assistants. For this reason, as well as others, it is better not to have more than one professional assistant. I prefer to have none, unless an anesthetic is to be given. Careful pressure may be used to aid in removing the wash water after the uterus has been once thoroughly emptied.

It has been said that the entire parturient canal is especially fitted for absorption after this operation. I do not think this is a fact. I think this conclusion has been reached by considering the condition identical with that of a puerperal patient. In parturition almost the entire lining of the uterus is thrown off, leaving the mouths of the blood vessels more or less open. In this case there is little, if any, exfoliation of the mucous membrane. In my case there were several unorganized plates of hardened blood thrown out, evidently incrustations upon the uterine walls. Russ² speaks of washing out "large flakes of dead vaginal epithelium." Mohamed Asadulla reports that the discharge contained "shreds of

¹ Medical News, vol. 1., 1887, p. 457, and in Maryland Medical Journal, vol. xvi., 1887, page 457.

² Journal of the American Medical Association, July 4th, 1891, page 1.

white organized membrane."¹ Such plates or crusts would tend to prevent even the usual amount of absorption. In parturition there is usually some laceration of the canal. In the operation for imperforate hymen the only raw surface would be on the hymen, unless the tubes should be ruptured.

In parturition the entire uterus usually acts together, though, especially with an unusual stimulus, hour-glass contractions sometimes occur. In rapid evacuations of the retained menstrual fluid a species of hour-glass contraction is to be expected. The fluid is so thick as to move slowly.² In rapid evacuation the vagina and lower portion of the uterus would be almost empty before much of the contents of the fundus had flowed out. The lower segment could, therefore, contract before the fundus, so that when the fundus got to work it must partially overcome the action of the cervix. The attempt to do this sometimes causes a regurgitation through the tubes, or a rupture of the tubes. The same condition may occur as the result of closing the mouths of the tubes by uterine contraction. Since rapid evacuation would cause the uterus to descend rapidly in cases of much distention, if the tubes should be distended, and adhesions exist, there would be great danger of rupture.

The form of incision recommended varies greatly.³ Some use the crucial or circular for rapid evacuation. For gradual evacuation I find recommended the simple puncture, linear incision, V-shaped and crescentic openings. Sisman⁴ used a small incision with drainage tube for gradual evacuation in three cases. All recovered. The vertical linear incision, forming a valve, seems to me the simplest and best, though for twenty-four or forty-eight hours I think the drainage tube might be an advantage. It should be removed as soon as the onward flow is checked.

The studies of Prof. Flores⁵ upon Mexican women, and those of other investigators, show that the primitive hymen is imperforate, but that absorption normally occurs, thus making

¹ Indian Medical Gazette, vol. xxvi., 1891, page 9.

² In Mossman's case (AMERICAN JOURNAL OF OBSTETRICS, vol. xiv., 1881, page 565) it would not flow through a half-inch opening.

³ I regard puncture per rectum as offering too many risks to be considered.

⁴ Wiener klinische Wochenschrift, June 5th, 1890.

⁵ Flores: "El Himen en Mexico," 1887.

it perforate. My case illustrates the fact that it is not necessary to mutilate a patient by making a large opening. After the opening is made the tendency is for it to grow larger, and a little assistance by dilatation is as much as is needed.

After the flow has stopped an antiseptic pad, which acts as a sentinel guarding against the entrance of foes, should be used over the vulva for at least two weeks. I cannot see any advantage in packing the vagina with iodoform gauze. It tends to retard the return of the vagina to its normal condition. Its introduction sometimes necessitates the use of an anesthetic.

Nor can I see any great advantage in stitching the mucous membrane of the anterior and posterior portion of the hymen together. It has the great disadvantage of making the patient think the operation a very dreadful thing.

I can hardly conceive the need of an anesthetic in ordinary cases (unless much cutting, washing, sewing, and packing are to be done). As a rule the hymen is not highly sensitive when so much distended. Occasionally it may be necessary to anesthetize a neurotic patient in order to make a satisfactory examination. In most cases a local anesthetic would be as much as required.

I do not remember to have noticed in any text book the peculiar condition of the cervix uteri after evacuation. One operator passed a sound into the cavity, and was unable for several days to distinguish where the line of demarkation was between cervix and vagina. In my own case, as the result of not being prepared to find such a condition, I for a moment drew back in alarm, lest I had entered the abdominal cavity. Perhaps this condition explains Hurd's report¹ of imperfectly developed uterus, inasmuch as he made no examination after allowing time for the uterus to recover its natural size. It must be remembered that in confinement the cervix is dilated but a few hours. In cases of retention of the menstrual fluid by imperforate hymen, the distention may exist for years. It is therefore not to be expected that the womb, and especially the cervix, will rapidly assume a normal condition.

In this operation too much attention cannot be given to asepticism. This does not, however, necessitate great ado.

¹ Loc. cit.

Clean instruments, clean hands, boiled water, and clean clothing, including later an antiseptic pad, are sufficient. Do not terrify the patient with a large display of instruments. Generally speaking, if the uterus has been distended to any perceptible degree the patient should be kept in bed for from ten days to two weeks, and she should not be permitted to do lifting or make violent exertions for from four to six weeks after the operation. In one case¹ the patient was up and at work the next day, contrary to the doctor's orders, and without any apparent injury. Mohamed Asadulla discharged his patient from hospital on the fourth day.² On the other hand, cases are reported of serious complications, and even death, as the result of getting up a week after the operation.³ There are other reasons, aside from the life of the patient, why the patient should be kept quiet. For months, and perhaps for years, the uterine supports have been abnormally relaxed. The uterus is heavy. When the pelvis is emptied, there will be a very strong tendency to develop procidentia and other displacements of the womb. As a rule, the patient feels unusually strong after the operation, and is therefore anxious to get up. The dangers must, therefore, be plainly described to the patient and the family.

The family should be told what symptoms to be on the lookout for, in order that the operator may be notified as soon as possible when complications develop. The temperature should be taken twice a day with a thermometer. I have been informed in more than one case of puerperal fever, by the attending physician, that there was no fever, when a test by the thermometer showed a temperature of 102° Fahr. or over. In one such case the temperature was up to 104°.

The discharge must be examined twice a day for a week, to make sure that there is no danger of septicemia. The bowels should be washed out on the next day after the operation, unless they clear themselves of their own accord. Do not use cathartics, if it is possible to avoid them, for at least four or five days after the operation. If it should appear that

¹ Wiggin, Med. Record, vol. xxxvi., 1891, p. 136.

² Indian Med. Gazette, vol. xxvi., 1891, p. 9.

³ Russ, Jour. Amer. Med. Assn., vol. xvii., 1891, p. 1.

there has been regurgitation through, or rupture of, the Fallopian tubes, the operator should lose no time in opening into the abdomen and thoroughly cleansing it.

The question has been asked if this operation should be performed at the menstrual period. As a rule, patients feel very well between periods. Hence the doctor first sees the case at a period. The patient is in especial pain at that time, and there is but one way to give relief to that pain without injuring the patient. At the period the patient is in constant and special risk of peritonitis or some other equally serious complication. I cannot imagine any valid reason for making an hour's delay in giving relief.

I have noticed but one case of spontaneous rupture of the hymen. The retention was of eighteen months' duration.¹

Ordinarily the diagnosis would seem simple enough. The physician in this case is a good general practitioner. No one was more surprised than he when informed of the true condition. McCauley² mistook the hymen for the membranes in labor. It was mistaken for a prolapsed bladder in one case.

Sometimes the attention of the physician is concentrated upon a result or complication of the principal trouble. Thus Somers³ relates a case of epilepsy which resisted all treatment until an imperforate hymen was punctured. Thompson⁴ records a case in which the condition of the hymen was not suspected until after death from tubercular meningitis.⁵

The presence of menstrual show is not conclusive evidence that the hymen is not imperforate. Simon⁶ and Packard⁷ mention cases of double uterus, one of which was closed by imperforate membrane. Lowe⁸ records a case of double

¹ Puesch, *Obstet. Gazette*, Paris, vol. vii., p. 321.

² See Dewees, "Diseases of Females," 1828, p. 40.

³ *Lancet*, May 10th, 1890, vol. i., p. 1010.

⁴ *Lancet*, 1876.

⁵ The writer has in mind a patient who had within three years two attacks of cerebro-spinal fever, both attributable to a very minute cervical canal. The first attack came with the first menstrual period. The true condition was not discovered until the second attack. The writer was subsequently consulted on account of a highly sensitive spine. The cervix had not been dilated.

⁶ *Monatsschrift für Geburtskunde*, 1864.

⁷ *New England Med. Gazette*, vol. xxvi., 1891, p. 345.

⁸ *British Med. Jour.*, 1887.

uterus and double vagina, one being closed by imperforate hymen. In both these cases the menstrual discharge came from the other side. A similar result is reported¹ in which the hymen was practically imperforate, having two capillary openings.²

Imperforate hymen is generally a congenital condition. Eaton³ mentions two cases in which the condition was acquired.

The youngest patient operated upon, so far as I have noticed, was 13 years old, and the oldest 36. Most of the patients were from 16 to 20 years of age.

Imperforate hymen is sometimes found at confinement. In such cases the condition may have been acquired. In several intercourse was through the urethra or rectum, there being a passage from the vagina to the bladder or rectum.

In conclusion, we are led to suspect that cases of imperforate hymen are not so rare as some imagine, and that many prove fatal without the condition having been discovered.

MILK FEVER.

BY

WILLIAM S. GARDNER, M.D.,

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(With two charts.)

FOR about twenty-four hours after delivery the breasts of the puerperal woman remain apparently in about the same condition that they were before labor. At the end of this period the blood flow to them is increased, the secretion, which had been present for a large portion of the period of gestation, flows more freely, and at the end of forty-eight hours the milk flow is established. It is commonly stated that the milk flow commences on the third day, but this

¹ Med. and Surg. Reporter, 1887.

² Little (Peoria Med. Monthly, vol. ii., 1881, p. 48) attended a confinement case in which the hymen seemed imperforate, but he finally found a minute opening.

³ "Diseases of Women," p. 197.

apparent error is due to the custom of counting the day of delivery as the first day of the puerperal period. I have investigated this point, and find that it is rare in normal cases for the flow to be delayed more than a very few hours beyond the normal average of forty-eight.

The older authors attributed almost every disorder of the puerperal period to some disorder of the milk flow. If a woman had phlegmasia alba dolens, it was due to a metastasis of the milk to the leg; if she had a peritonitis, the coagulated casein was found on the intestines; if she had any disease, it was always due to the milk, which by metastasis was charged with affecting first one organ and then another, until everything from the vertex to the great toe was included. Happily scientific investigation has revealed, at least partially, the true causes of a considerable number of the diseases formerly attributed to a determination of the milk to parts beyond the region of the mammary gland, and in this way relieved the much-maligned milk of many unjust charges. But even at the present time it is asserted that the milk secretion, especially at the beginning, causes an increase of the pulse rate and a rise of temperature of one or two degrees. It is a common thing to hear it spoken of, and our text books still cling to the statement. For example, Lusk says: "A temperature of 100.5° belongs within physiological limits. Schröder attributes the increased heat production to the combustion of organic substances which attends the involution of the uterus. To this are to be added, as provoking causes, the reaction of small wounds in the course of the genital canal, *and disturbances attendant upon lactation.*" Playfair says: "For a few days there is often a slight increase of temperature, especially toward evening, which is probably caused by the rapid oxidation of tissue in connection with the involution of the uterus. *In about forty-eight hours there is a rise of temperature connected with the establishment of lactation, amounting to one or two degrees over the normal level;* but this again subsides as soon as the milk is freely secreted."

Lately, through the medical journals, these statements have been denied, but little evidence has been produced to substantiate the denials. Since we attach so much impor-

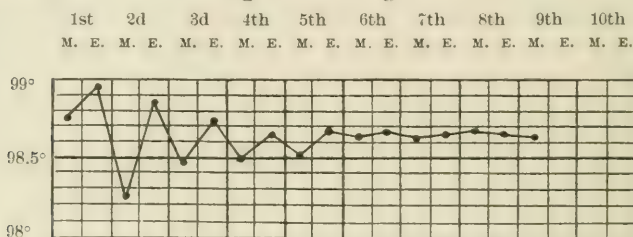
tance to the condition of the pulse and temperature during the puerperal period, it is highly important that we should be familiar with the normal pulse and temperature for that time. To learn this it is necessary to study the temperature and pulse of the whole lying-in period, and especially that portion of the period in which is the beginning of lactation. I have attempted to learn this normal pulse and temperature of the puerperal period by actual observation. Some three years ago, when revising the record blanks for the Maternité, I inserted special spaces for noting the time at which the milk flow began, the temperature and pulse taken at the time which was nearest this beginning flow, and also for the temperature and pulse observation taken just twenty-four hours previous to the flow.

To get at the average pulse and temperature for the whole lying-in period, I have taken fifty normal cases and averaged them, with the following results :

DAY.	MORNING.		EVENING.	
	Pulse.	Temperature.	Pulse.	Temperature.
1.	71	98.75°	73.1	98.96°
2.	70.7	98.26°	71.2	98.88°
3.	74	98.48°	72.5	98.73°
4.	76.6	98.5°	71.8	98.66°
5.	76.4	98.51°	72	98.68°
6.	77.3	98.63°	72	98.67°
7.	75.3	98.63°	69.7	98.66°
8.	77.6	98.68°	75.2	98.66°
9.	79.7	98.65°	...	....

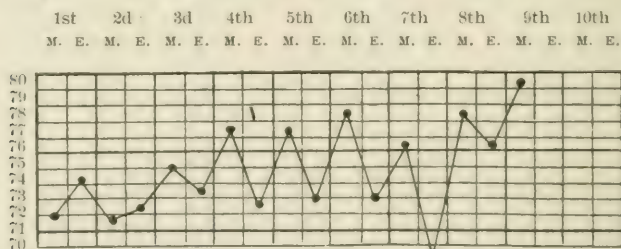
In reviewing this table, one of the most striking points is the fact that we do not find the marked depression in the pulse rate that is spoken of by almost all the text books. The lowest morning pulse is on the morning of the second day, and then it is almost 71. This certainly cannot be considered far from normal. The highest morning pulse, nearly 80, is on the ninth day; and this slight acceleration was, no doubt, partially caused by the anticipation of getting out of bed on that day. The lowest evening pulse, nearly 70, is found on the seventh day; the highest, 75, on the eighth day. A glance at the chart will show that the pulse is almost invariably slower in the evening than on the morning of the same

day, the only exception being the second day, and then the evening pulse averages only one-half of one beat more than the morning pulse. From the statements that have been made in regard to the effect of beginning lactation upon the pulse, we would expect to find an acceleration of the pulse on the third day; but the table shows that there is no such acceleration, either morning or evening.



Composite chart showing the average temperature of fifty normal puerperal patients.

It is well known that the pulse is increased in frequency during labor, and I am inclined to think that the fallacy upon which the statement is based that a slow pulse is usually found during the puerperal period is due to the fact that after labor the pulse does decrease in frequency; but this decrease is from a rate much above the normal down to about the normal rate, and not a decrease from the normal rate to below



Composite chart showing the average pulse of fifty normal puerperal patients.

the normal. If seventy-five pulse beats per minute be considered normal for women, the table shows that on the average, during the uncomplicated puerperal period, there is no marked variation of the pulse from the standard of perfect health.

In reviewing the temperature of this table, it is seen that none of the morning temperatures after the first day was more than 0.18° above the normal, the highest average

morning temperature being that of the eighth day, the lowest that of the morning of the second day. The highest temperature of the table is that for the evening of the first day. But twenty-one of the fifty patients were confined less than ten hours before the observation was made—a time too short for the elevation of temperature caused by labor to subside, and at a time of the day when temperatures fall with least readiness. After the rise of temperature caused by the labor has passed off, there is, as a rule, a slight daily fluctuation, the evening temperature being usually slightly higher than the morning temperature. But when the puerperal period is uncomplicated these fluctuations should not be greater than that of the usual temperature variations in health. When the temperature exceeds this limit, even for a short time, some local exciting cause should be looked for and can generally be found. It will be noticed that the temperature for the evening of the third day is lower than that of the second day, and is less than one-quarter of one degree above 98.5° .

To ascertain as accurately as possible what the pulse and temperature are just when lactation begins, and to show whether there is any rise of either or both with the beginning of the milk flow, I have taken the observations of the pulse and temperature of one hundred cases recorded at the nearest practicable time to the beginning milk flow, and also the observations recorded for the time just twenty-four hours previously, and averaged them. Fifty of these cases were taken from the records of the year just ended, and fifty from the records of the previous year. The cases were taken as nearly consecutively as possible; the cases dropped being those which presented evidence of some influence, not in the breasts, that affected the pulse and temperature. A large portion, but not all, of these observations corresponded to the observations for the evenings of the second and third days after labor.

The average pulse and temperature for these one hundred cases, for the period just twenty-four hours before the milk flow, was, pulse 73.7, temperature 98.81° ; for the time corresponding to the beginning milk flow the pulse was 4.67, the temperature 98.79° . These averages show that while the pulse is increased a portion of one beat per minute, the temperature is actually only an average of one-eighth of one

degree less at the time the milk comes in than it was twenty-four hours previously; and that the temperatures correspond very nearly with the temperature for the evenings of the second and third days; and that the flow of milk does not interfere with the gradual reduction of the average evening temperature from the first day, when it is highest, to the fourth day, when it is as low as it ever goes.

The conclusions to be drawn from more than two thousand recorded observations of pulse and temperature during the normal puerperal period may be stated in a very few words:

1. The average pulse for the whole normal puerperal period does not vary more than a few beats from 75 per minute.

2. The average temperature for the whole normal puerperal period does not vary at any time as much as one-half of one degree from 98.5°.

3. The beginning of lactation does not influence to any appreciable extent either the pulse or the temperature.

712 N. HOWARD STREET.

LACERATION OF THE ANTERIOR VAGINAL WALL, AND ITS REPAIR.¹

BY

T. J. WATKINS, M.D.,
Chicago.

(With six woodcuts.)

LACERATION of the anterior vaginal wall has hitherto received little attention. Emmet² and Schatz³ have considered this subject only in its relation to rupture of the levator ani muscle, and state that its repair is impracticable. Mundé⁴ reports a case of median separation accompanied with hernia of the bladder.

¹ Read before the Gynecological Society of Chicago, April 17th, 1891.

² "Principles and Practice of Gynecology," page 364.

³ Centralblatt für Gynäkologie, No. 40, 1883.

⁴ AMERICAN JOURNAL OF OBSTETRICS, June, 1890, page 614.

Byford¹ is, so far as I have been able to ascertain from a somewhat extensive study of the literature, the only author who has appreciated in any degree the true nature of the lesion, and the only operator who has suggested a rational method for its repair.

In the consideration of lacerations of the pelvic floor, all the authorities, so far as I have been able to determine, have considered only the rupture of its muscles. It is unphysiological to attribute continuous support to muscles, therefore the connective tissue alone remains to be considered. The connective tissue of the anterior vaginal wall forms a tense, firm band across the vagina opposite the neck of the bladder, which becomes gradually thinner as it approaches the uterus



FIG. 1.

and as it extends along the urethra. It is attached to the bony pelvis on either side, and its reticular arrangement is such that it permits much more longitudinal than transverse freedom of motion—that is, it is so arranged as to give elastic support to the uterus, and to prevent prolapse of the urethra and bladder. The tension which this band gives to the vagina is apparent to the touch; and on introducing a Sims' speculum, with the patient in the left lateral position, the effect upon the anterior vaginal wall can be easily seen (see Fig. 1)—that is, from the introitus vaginae to the uterus the anterior vaginal wall presents:

¹ "The Practice of Medicine and Surgery applied to the Diseases and Accidents incident to Women," fourth edition, pages 173, 479, and 501.

1. A convexity corresponding to the urethral curve (Fig. 1, *a-b*).

2. A marked concavity opposite the trigone of the bladder (Fig. 1, *b-c*).

3. A straight line or a slight convexity from this point to the uterus (Fig. 1, *c-d*).

When this fascia is intact and involuted, urethrocele and cystocele cannot occur. The prevailing theory that urethrocele and cystocele are dependent upon and cannot occur without laceration of the posterior vaginal wall is erroneous, because—

1. Extensive laceration of the posterior vaginal wall, even through the sphincter ani, frequently occurs without urethrocele or cystocele.

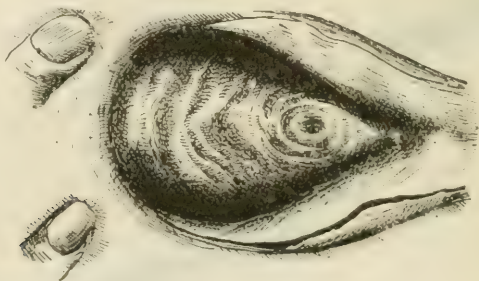


FIG. 2.

2. Urethrocele and cystocele occur without laceration of the posterior vaginal wall.

3. Incision of the posterior vaginal wall—that is, artificial laceration—never produces urethrocele or cystocele.

This time-honored fallacy may be explained by the fact that both walls of the vagina are often simultaneously ruptured, and that the posterior rupture is much more apparent than the anterior.

Laceration of the anterior vaginal wall may be either unilateral or bilateral. I have never met with a case of median laceration, and have been able to find only one case on record.¹ The lesion is usually submucous, and occurs at or near the insertion of the fascia into the bony pelvis. It often deprives the horizontal rami of the pubes of their fascial covering for

¹ Mundé, *op. cit.*

a variable distance from the urethra, and may involve the levator ani muscle, as mentioned by Emmet and Schatz.¹ The location and extent of the laceration are easily detected by touch, and verified by inspection of the abnormal curvature of the anterior vaginal wall (see Figs. 2 and 3). The amount of the urethrocele and cystocele which result is entirely dependent upon the extent and location of the laceration, and upon the amount of involution which has taken place.

Etiology.—The child's head, in its passage through the par-

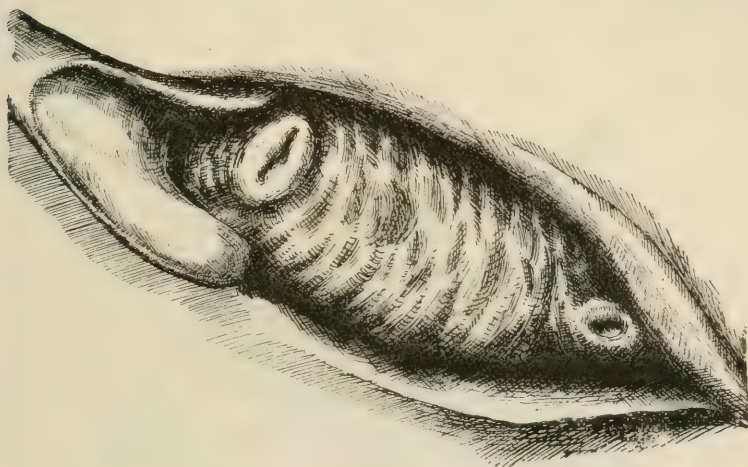


FIG. 3.

turient canal, may produce laceration of the anterior vaginal wall—

1. By the tension and pressure incident to the engagement of the vesico-vaginal septum between it and the pubes.
2. By tearing and grinding of the connective tissue from its attachment.

Schatz¹ mentions anterior laceration of the levator ani muscle by instruments, and advises against oblique application of forceps.

Symptomatology.—The objective symptoms have already been considered. The subjective symptoms, which are dependent upon the amount of urethrocele and cystocele, are—

1. Partial incontinence of urine. The urine escapes upon

¹ Op. cit.

exertion, such as coughing, sneezing, laughing, walking, lifting, or as soon as the desire to urinate is experienced.

2. Total incontinence of urine.

The other subjective symptoms are those which are described in the text books in the consideration of cystocele and prolapse of the uterus.

Diagnosis.—The diagnosis depends upon the recognition of the local lesion and of the resultant symptoms.

Treatment.—I. Prophylaxis: The prophylactic treatment consists—

1. In the support of the vesico-vaginal septum while the

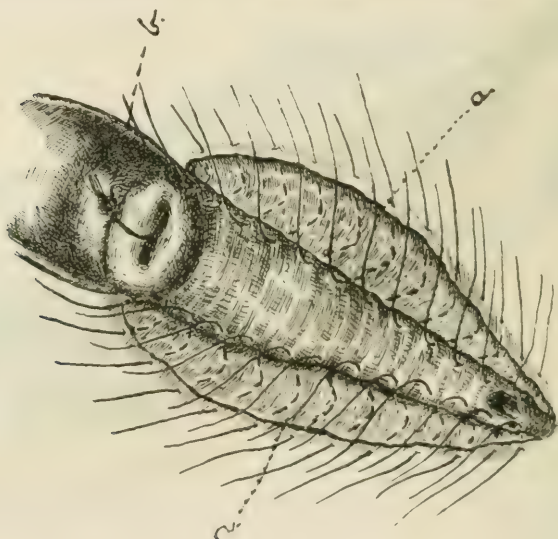


FIG. 4.

fetal head is entering the true pelvis—that is, the prevention of the engagement of the vesico-vaginal septum between the head and the pubes.

2. In the prevention of excessive pressure of the head upon the pubic arch (Schatz).

3. In the employment of the usual measures for hastening involution.

II. Operation: The rational operative treatment is to restore, as far as possible, the lacerated fascia to its normal condition. The usual operations on the anterior vaginal wall have failed to accomplish this result, because—

1. They roll together tissues not involved in the laceration.
2. They include so little connective tissue that, as a rule, no permanent support is obtained.

3. Retroposition of the uterus frequently follows.

4. They produce little or no effect upon the urethrocele.

The multiplicity of median operations on the anterior vaginal wall would seem to indicate that the results of these operations have been more or less unsatisfactory.

An operation to be rational—

1. Must be upon the portion of the anterior vaginal wall



FIG. 5.

which has been torn—that is, it must bring together, as far as possible, the lacerated tissues.

2. Must include much of the pelvic fascia of the anterior vaginal wall.

3. Must neither shorten the anterior vaginal wall nor bring the lateral walls of the vagina together in front of the uterus.

The unsatisfactory results of the median operations induced me to attempt a lateral operation which I have performed twenty times, and which has in every case practically fulfilled the indications.¹ The technique is as follows :

¹ Dr. John A. Lyons, of Chicago, has performed this operation three times with results practically identical with my own.

The patient being placed in the left lateral position, the anterior vaginal wall is exposed by Sims' speculum, and a point to the side of the urethra, near its meatus, caught by a tenaculum. The denudation is commenced at this point, and extends along the antero-lateral walls of the vagina to a point beyond the prolapse. This point may be opposite the neck of the bladder, or the denudation may extend even as far as the lateral aspect of the cervix uteri. The breadth of the denuded surface is dependent upon the extent of the urethrocele and cystocele; that is, it should be sufficiently wide to take in all the redundant tissue of the urethrocele and cystocele (see Fig. 4, *a*). The denudation may be upon one or both sides, according as the laceration is unilateral or bi-



FIG. 6.

lateral. Should the denuded surface extend beyond the neck of the bladder, the cervix uteri should be drawn firmly upward and backward while the sutures are being inserted and tied. For this purpose I have adopted the method recommended by Dr. E. C. Dudley, in the technique of Emmet's operation for procidentia,¹ of fastening the cervix uteri to the end of the speculum by means of a suture (see Fig. 4, *b*).

Beginning at the uterine end of the denudation, buried silkworm-gut sutures are now passed from side to side in a curved line which has its convexity directed outward and forward. Each suture as inserted is tied, and traction is exerted toward the cervix while the next suture is being introduced and tied. The sutures should include as much con-

¹ Pepper's "System of Medicine," page 162.

No.	Name.	Date of Injury.	Lesion.	Indications.	Date of operation.	Result.
1	Mrs. H. . . .	1885	Bilateral laceration .	Urethrocele. Total incontinence of urine.	February, 1890. .	Cure.
2	Mrs. C. . . .	1880	Unilateral laceration .	Urethrocele. Total incontinence of urine.	February, 1890. .	"
3	Mrs. C. . . .	1887	Bilateral laceration .	Urethrocele. Cystocele. Prolapse of uterus. Partial incontinence of urine.	March, 1890. . . .	"
4	Mrs. T. . . .	1888	"	Urethrocele. Partial incontinence of urine.	March, 1890. . . .	"
5	Mrs. F. ² . . .	1882	"	Urethrocele. Cystocele. Total incontinence of urine.	April 3d, 1890. . .	"
6	Mrs. K. . . .	1887	"	Urethrocele. Cystocele. Partial incontinence of urine.	June 6th, 1890. .	"
7	Mrs. T. . . .	1888	"	Urethrocele. Cystocele. Partial incontinence of urine.	June 9th, 1890. .	"
8	Mrs. N. . . .	1885	"	Cystocele. Prolapse of uterus.	June 15th, 1890. .	"
9	Mrs. W. . . .	1886	"	Urethrocele. Cystocele. Partial incontinence of urine.	July, 1890.	"
10	Mrs. D. . . .	1886	"	Urethrocele. Partial incontinence of urine.	July, 1890.	"
11	Mrs. Y. . . .	1889	"	Cystocele. Prolapse of uterus.	August, 1890. . . .	Partial relief.
12	Mrs. C. . . .	1882	"	Urethrocele. Cystocele. Prolapse of uterus. Partial incontinence of urine.	September 22d, 1890.	Cure.
13	Mrs. H. . . .	1884	"	Urethrocele. Partial incontinence of urine.	Sept. 27th, 1890. .	"
14	Mrs. E. . . .	1888	"	Urethrocele. Cystocele. Prolapse of uterus. Almost total incontinence of urine.	Oct. 6th, 1890. . .	"
15	Mrs. S. . . .	1887	Unilateral laceration .	Slight urethrocele. Partial incontinence of urine.	November, 1880. .	"
16	Mrs. H. . . .	1887	Bilateral laceration .	Urethrocele. Slight cystocele. Partial incontinence of urine	December, 1890. .	"
17	Mrs. McG. . .	1885	"	Urethrocele. Cystocele. Partial incontinence of urine.	Dec. 10th, 1890. .	"
18	Mrs. M. . . .	1884	"	Urethrocele. Cystocele. Prolapse of uterus. Partial incontinence of urine.	March 4th, 1891. .	"
19	Mrs. C. . . .	1886	"	Slight urethrocele. Partial incontinence of urine.	March, 1891. . . .	"
20	Mrs. A. B. . .	1888	Unilateral laceration .	Slight urethrocele. Partial incontinence of urine.	March, 1891. . . .	"
21	Mrs. F. ³ . . .	1888	Bilateral laceration .	Urethrocele. Cystocele. Partial incontinence of urine.	Sept. 3d, 1890. . .	"
22	Mrs. H. ³ . . .	...	"	Urethrocele. Cystocele. Partial incontinence of urine.	Sept. 25th, 1890. .	"
23	Mrs. G. ³ . . .	1890	"	Urethrocele. Cystocele. Partial incontinence of urine.	March 15th, 1891. .	"

¹ In the six cases in which prolapse of the uterus was one of the indications for the operation, the result, as far as this condition is concerned, must be understood to refer only to the effect produced upon the uterus by the restoration of that portion of its elastic support furnished by the anterior vaginal wall.

² This patient had already undergone two median operations without any relief. ³ Cases operated upon by Dr. Lyons.

nective tissue as possible, care being taken not to injure the bladder, ureters, or urethra. After passing the base of the trigone of the bladder, the sutures should be passed deeply into the lateral wall so as to include the fascia of the posterior vaginal wall near its insertion into the pubes, and as deeply into the anterior vaginal wall as the increased thickness of the vesico-vaginal septum from this point outward will permit. The fixation suture should now be removed without making traction on the cervix. The ends of the sutures should be left long and should be turned into the vagina (see Figs. 5 and 6).

The after-treatment consists in the measures usually employed in plastic operations upon the vagina. The use of the catheter should, if possible, be avoided. The stitches may be removed after a week, or may be allowed to remain for two or three weeks, according to the requirements of the individual case.

The operation has entirely fulfilled both the mechanical and symptomatic indications, except in one case, in which, on account of suppuration around some of the sutures, only partial relief was obtained. Up to this time, so far as I have been able to ascertain, the results of the operation have been permanent.

I append a tabular statement of the twenty cases in which I have performed this operation, and of the three cases operated upon by Dr. Lyons.

INFANTILE SPASTIC PARAPLEGIA.

BY

JOHN FERGUSON, M.A., M.D. Tor., L.R.C.P. Edin.,

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THE spastic paraplegiæ of children have, for a long time, been recognized clinically. The writings of Little, Heine,

Seguin, Gowers, Erb, and many others have done much to clear away the confusion that hung around these cases. To no one, however, is more credit due in these researches than to Prof. Wm. Osler, of Johns Hopkins, Baltimore. Although much is known clinically regarding spastic paraplegiæ in children, there yet remains very much to be done on the pathology and morbid anatomy. Before this part of the work becomes clear and established, many observations must of necessity be made and a large collection of cases brought together, from which deductions may be drawn as to the real share that cerebral or spinal lesions play in these forms of palsy, and especially in the paraplegic type.

The case on which the following remarks are based was that of a boy who died aged $3\frac{1}{2}$ years. When 1 month old the legs were noticed to be stiff and rigid, and to resist flexion while being dressed. The health and nutrition of the child continued good. He did not begin to walk till after 2 years of age. The gait was distinctly spastic in both legs. There was cross-legged progression. At the age of $2\frac{1}{2}$ talipes equinus began to develop, and steadily increased until the heels were completely raised from the ground. The adduction of the thighs was of such an amount as to cause the feet to cross the mid-line to the extent of three and four inches to the opposite side. The knee jerk was plus on left side, plus-plus on right side. There was very slight ankle clonus on right side. The arms were perfectly normal. No nystagmus. Slight internal strabismus of left eye. The papillary reflexes were normal. The child was slow to learn to speak, but in other respects appeared intelligent. He was very irritable in temper. During the last six months of life he had several epileptic fits, the signal symptom coming on in the great toe of one or other foot. No reaction of degeneration. The head was born in the occipito-posterior position, and is reported to have been very much elongated and pressed out of shape. There were no sensory derangements.

Examination revealed a patch of sclerosis at the upper end of each Rolandic fissure, extending back on the ascending parietal convolution, rather more than forward on the ascending frontal. No other parts of the cerebral surface showed any abnormal changes. There was distinct atrophy of the

cortical cells in the affected areas. Traced from these areas, there were tracts of degeneration which passed down in the middle of each posterior limb of the internal capsule. These tracts of degeneration could be followed through the pons and medulla. No evidence whatever of degeneration could be discovered in the columns of Türek or anterior direct pyramidal tracts. Well-marked degeneration was traced throughout the length of the cord, in the lateral tracts. The anterior cornua presented a normal appearance at all levels.

In the above conditions of morbid anatomy we have very distinct proof of the primary cerebral origin of the palsy; that there was, no doubt, at birth some injury to the cortex, and that this caused the atrophy of cortical cells and subsequent descending degeneration. We have also in this case an example of bilateral monoplegia affecting the legs. From the position of the atrophy and sclerosis, we can find strong reason for locating the leg centre in the upper part of the Rolandic area. The entire freedom of the arms, and the absence of any degeneration in the columns of Türek, must be connected together, and naturally give support to the opinion that these columns contain fibres for the arms, and trunk muscles acting upon the arms. The spastic paralysis of the legs and the degeneration in the lateral tracts show very clearly that these latter are mainly for the legs. This case is undoubtedly an example of the cerebral form of infantile palsy. The strabismus of left eye and the occurrence of epilepsy point also to a cerebral origin. The condition of the lateral tracts was that of a degeneration, and not an absence of development. Further, the transverse area of the degeneration was not as great as that of the lateral tracts, so that probably only so much of these tracts were degenerated as represented fibres for the legs, from the leg centres in the cortex. From the fact that there was a distinct degeneration, the cortex and lateral tracts must have been developed and then destroyed by morbid processes of a chronic nature. I am of the opinion that where cerebro-spinal paths are not developed the spino-neural are not likely to be developed either. In such a condition there would be arrested growth of muscle and deficiency or loss of reflexes, in proportion to the deficiency in the spino-neural development. There is room for much work here, however.

A CLINICAL REPORT OF TWO CASES OF REMOVAL OF OVARIES, WITH INTESTINAL LESIONS.¹

BY

GUSTAV A. KLETZSCH, M.D.,
New York.

BOTH patients were in Dr. Cleveland's service in the Woman's Hospital and were operated on by him. The specimen and part of the history of the second case have already been presented to the Society by Dr. Cleveland. I give the full histories of both cases, in order to make a comparison between them complete. Undoubtedly the treatment which I suggest may appear heroic, but in appropriate cases it can be applied with advantage to the patient. Had the diseased portion of the intestine in the first case been removed entirely, the result might have been different. As it was left, it caused trouble which ultimately resulted in death.

Another point common to both cases is that neither patient complained of any bowel trouble previous to the operation, which would have drawn the attention of the operator to the existence of such extensive adhesions between the ovaries and the sigmoid flexure of the colon.

The complete histories are as follows:

CASE I.—Mrs. A. H. entered the Woman's Hospital April 4th, 1890; she was aged 38, married eleven years, never pregnant. Her periods commenced with her fourteenth year, and were irregular but painless. After marriage her periods appeared every four to five weeks, duration seven days, amount scanty. They were preceded for two or three days by pain in the left side. Last period March 30th; duration only one day; amount very scanty. Patient had been sick for about four years, and complained chiefly of pain in the left groin, radiating down the inner side of the left leg. On walking she had severe pain in the pelvis. She had but slight leucorrhœal dis-

¹ Read before the New York Obstetrical Society, May 19th, 1891.

charge. Her bowels were regular, and there was no vesical trouble.

Diagnosis made at examination: Uterus anteflexed; left ovary and tube enlarged, right tube not enlarged.

Dr. Cleveland operated on April 14th. A small median incision was at first made, but it was necessary to enlarge it to four inches. A mass the size of a small orange was found on the left side, firmly adherent to the pelvic wall and sigmoid flexure of the colon. On closer inspection it was found that the mass consisted of the enlarged left tube, with an abscess of the left ovary which had supplicated into the intestine, there being three distinct fistulous openings. The wall of the intestine at the point of adhesion was very much thickened and inflamed. A careful attempt was made to dissect the mass from the intestine, but the wall was so friable that when the separation was completed it was found that there were two distinct rents in the wall of the gut—the upper one about two inches long, and the one below the pelvic rim about one inch long, both extending through the serous and muscular coverings of the intestine down to the mucous membrane. They were separated from each other by a bridge of unbroken wall. Both lacerations were closed by an interrupted silk suture, and when completed the line was in each case of a semi-circular shape and the fistulous openings could not be seen. Apparently the repair of the wall was complete.

The tumor, consisting of the enlarged ovary and tube, was then brought up to the abdominal wound, the pedicle was transtixed, tied, and divided. The stump was cauterized and dropped back. The right ovary and tube were found to be normal. There was very little bleeding. The pelvic cavity was thoroughly flushed with warm water. The abdominal wound was closed by interrupted silkworm-gut sutures. The patient was put in bed in a fair condition. After recovering from the effects of the ether, she complained of great pain in the abdomen and back. She vomited moderately, and was unable to pass her water, so that she was catheterized. A rectal tube was passed on the second day, but no gas escaped. Rochelle salt was then given, but without effect. On the third day small doses of calomel were administered, and in the evening her bowels moved and gas escaped per rectum.

Up to this time her temperature was below 100°. On the fourth day she became restless and thirsty, and temperature rose to 101°. On the fifth she complained of severe pain in the bowels, but had a movement and passed gas. She was still catheterized. On the seventh day the abdominal sutures were removed and union seemed to be complete. On the fourteenth day an abscess formed in the abdominal wall and pointed towards the left side of the wound. After poulticing, it opened into the wound and could not be healed, on account of the constant discharge of pus. Her temperature was never very high, but her pulse was rapid; she perspired freely, and her face was of a grayish hue. She took nourishment well, but did not gain in strength. Her stools became diarrhetic in nature and of an exceedingly bad odor. She was still catheterized, and there was some vaginal discharge, but no pus escaped per rectum. By May 14th her mental condition was impaired: her speech became incoherent, and on the 16th she did not recognize her friends. Her temperature in the evening was 101°, the pulse being very rapid, and on the 18th she died.

CASE II.—Mrs. C. G., age 21, was admitted to the Woman's Hospital February 23d, 1891. She had been married five months, and had had one miscarriage. Her periods commenced with the fourteenth year. She always menstruated irregularly, at intervals of from one to two months. The flow was of from five to six days' duration and was considerable in amount. For the first two days she complained of a great deal of pain in the left side. She had leucorrhea and was never very strong, but was able to keep at her work until five weeks ago, when the pain grew constant in the left side, radiating through the right side and down the left leg. She was easily exhausted, and lost strength and flesh. Her appetite was good and she slept well.

After examination the following diagnosis was recorded: Uterus anteflexed and but slightly movable. Two masses are felt, one on each side of the uterus, the right one hard, the left cystic.

March 9th, 1891, she was operated on by Dr. Cleveland. A median incision was made about four inches long. On exploration it was found that the left tube and ovary were

inflamed and enlarged, and were intimately adherent to all the surrounding tissues. In separating the adhesions attaching the mass to the intestine the wall of the latter was lacerated. The tumor was removed and the stump was cauterized. Owing to the amount of shock, the appendages on the right side, which were also enlarged and firmly adherent, were not removed. The treatment of the wounded intestine was now considered, and as it was found to be in a very unhealthy condition and lacerated through the serous and muscular coat, about five inches of it were excised, the ends being united by circular enterorrhaphy. The lower end was stationary, being attached to the pelvic wall. The upper end was brought down to it, and was stitched to it by a circular row of Lembert's sutures. The pelvic cavity was thoroughly washed with warm water. A glass drainage tube was placed in the left side of the pelvic cavity, and around it the cavity was packed with long strips of iodoform gauze. The patient was put in bed suffering from severe shock. She rallied slowly under the use of stimulants and hot applications over the chest. On recovering from the effects of the ether, she complained of severe pain in the left side, and small doses of Magendie's solution had to be given for several weeks to ease the pain and to prevent peristaltic action of the bowel. There was no attempt to induce a movement of the bowels until after the eighth day, when small doses of calomel were repeatedly given, followed by a saline. On the ninth day her bowels moved without any difficulty. The first tampon of iodoform gauze was left in for thirty-six hours, when it was removed and the pelvic cavity was thoroughly irrigated with a weak solution of carbolic acid and fresh packing was introduced. This was continued daily, and at times twice a day, until the wound in the abdomen had healed. On the fifth day there was a slight fecal odor to the discharge coming from the wound, but this did not recur. The patient had to be catheterized for several weeks. She vomited considerably, especially toward the end of the first week, but there were no signs of obstruction of the intestine. There was no accumulation of gas in the bowels, as the abdomen remained retracted. The temperature seldom rose above 102° , and whenever it did the pelvic cavity was irrigated. She was kept on liquid diet

for several weeks, so as to avoid solid stools. Her bowels moved on the ninth day, and almost daily afterwards. After the first week her general condition improved rapidly, and about the fifth week she had recovered entirely.

The following points suggested by the above histories are of special interest, and I invite discussion upon them :

1. The effect of laying bare the muscular coat of the intestine over a considerable surface. This may cause either paralysis of the gut and the formation of fresh adhesions firmer than the former ones, or may result in actual necrosis and the formation of a fistula. Such a fistula may result fatally, first, by causing acute septic peritonitis ; or, secondly, through long-continued drain upon the vital forces.

2. What treatment should be followed if, during the course of an abdominal section, the gut is either denuded of its serous coat or its wall is actually torn through ? Is the surgeon justified in resecting in every case ? Should he simply bring together the edges of the torn serous coat, or is it sufficient to tampon with iodoform gauze, drain, and trust to the reparative power of Nature ?

3. Provided that resection is performed, what method is the best—circular enterorrhaphy (as in the case reported), lateral enterorrhaphy, or anastomosis according to Senn's method ?

It is evident that no fixed rule can be laid down. Each case must be treated as seems best at the time, with due regard to the condition of the patient and her ability to stand the additional manipulation necessary.

In conclusion, I would add that these cases show that any man who attempts a laparotomy should be prepared to encounter and to promptly deal with the most formidable complications.

IN MEMORIAM.

FRIEDRICH WILHELM VON SCANZONI.

Born 1821; Died June 12th, 1891.

(With plate.)

TWICE within the space of one month it has become the melancholy duty of the writer to mourn the death of one of

his friends and teachers, who above all others was prominent in moulding the writer's ideas and shaping his future life. Close upon the death of Fordyce Barker comes to us the news of Scanzoni's decease. He had been so long out of the current of the rapidly flowing stream of gynecology that for fully twenty years his name had been missed from medical literature, and many even thought him dead. Hence the news of his death has not attracted the attention which his former phenomenal prominence as a writer and teacher in obstetrics and the diseases of women merited.

Scanzoni was born at the village of Lichtenfels, near Prague, and there completed his studies. Soon after graduation he became assistant to the Maternity Clinic, then one of the most famous in Germany, the celebrated Professor Kiwisch being at its head. The latter was called to Würzburg as Professor of Obstetrics, and died soon after assuming that position. Scanzoni was summoned to fill his place, having just before (1848) published his text book on obstetrics, which was destined to become the leading work on that subject for many years. From that time on Scanzoni's star began to rise. His popularity as a teacher and practitioner of gynecology and obstetrics exclusively grew to such proportions that students flocked to his lectures from all parts of the world, and no woman suffering from a disease of her sexual organs was content until she had consulted Scanzoni. A call to attend the Empress of Russia in confinement, which he accepted, and for which service it was reported that he received one hundred thousand rubles and a spacious house in Würzburg (the writer never heard him mention the exact amount of his fee), capped the climax of his fame, and from that time for many years several of the hotels of Würzburg lived on the aristocracy of Russia who came to consult Scanzoni. It may truly be said that between the years 1850 and 1870 no specialist in obstetrics and the diseases of women could compare in reputation, popularity, and pecuniary success with Scanzoni. And his reputation was not limited to Germany alone, but spread throughout the civilized world. A reference to obstetrical and gynecological text books written during the last thirty years will amply substantiate this statement, for his name is found mentioned as an authority on nearly every subject.



J. Langdon

Thirty years ago, before the era of surgical gynecology, Scanzoni was the recognized leader of the specialty as it then existed, and *facile princeps* of all his competitors. His text book on obstetrics, enlarged to three volumes, and a work of two volumes on the diseases of women, appeared about the year 1856, and still represent, without material change, the principles and practice of those two branches as they exist at the present day, always considering the advance from medical to surgical gynecology during the last twenty-five years.

Besides the two works mentioned, Scanzoni wrote a book on so-called "Chronic Metritis," and published an annual series of contributions to obstetrics and gynecology, entitled *Scanzoni's Beiträge*, which ran from 1853 to 1873. Numerous journal articles also appeared from his pen, and whatever he wrote was always original, thorough, and to the point.

The influence of Scanzoni upon gynecology was entirely of a medical, non-surgical character. At the time of his greatest fame, surgical operations on the female genital organs were of comparatively rare occurrence; ovariectomy was in its infancy; successful plastic operations for repair of injuries of the female genitalia were looked upon as great achievements, and antiseptic surgery was practically unknown. And in spite of the conservatism inherent to the time, Scanzoni succeeded in achieving many wonderful results and in elevating the practice of gynecology to the dignity of a specialty. In those years, Scanzoni in Germany, Récamier in France, and Simpson in Great Britain were the accepted leaders in obstetrics and gynecology. Among the theories advanced by Scanzoni, those on the production of placenta previa, of chronic inversion of the uterus, chronic metritis, pelvic hematocele, are but a portion of the many still accepted at the present day. Early in the sixties Scanzoni was made an hereditary baron and a privy councillor of the kingdom of Bavaria, with the title of Scanzoni von Lichtenfels. Numerous decorations, including grand crosses, were conferred upon him by European sovereigns.

After the year 1870 Scanzoni's interest in the advancement of medical science began to flag. His enormous practice, large fortune, and previous years of hard work gradually led him to take life more easily and to enjoy his leisure

moments; hence for twenty years before his death he practically contributed nothing to medical literature. As a result of this life of ease he became stout and phlegmatic; and when the writer last saw him, at the first meeting of the German Gynecological Society in Munich, in 1886, he had lost nearly all of the vivacity and sparkling wit which made him a most charming companion twenty years before. Soon after this his mental powers began to fail; he resigned his professorship and retired to his estates at Arco-Zinneberg, in the Bavarian Alps. Here it is reported that he died, probably of general paresis.

To Scanzoni the writer owes the first incentive to the study of obstetrics and the diseases of women. When, fresh from the Harvard Medical College, after a winter's study at the University of Würzburg, he applied for the position of junior assistant to the obstetrical clinic, he was most kindly received by its chief, Professor Scanzoni, and his application granted. After a year's service in that capacity, Scanzoni offered him the promotion to the place of senior assistant and tutor at the School of Midwives, in which position he served for two years. The war between France and Germany then breaking out, it was solely due to Scanzoni's powerful influence that the writer, an alien on German soil and a graduate of a foreign university, succeeded in obtaining his commission as battalion surgeon in the Bavarian army, which enabled him to take part in the campaign against France from beginning to end. The writer will never forget how, on the day preceding his departure for the front, when he called on Scanzoni to take leave of him, the kind, genial man embraced and kissed him in German fashion and bade him Godspeed.

During an association of nearly four years the writer had ample opportunity to observe and admire the quick wit, genius, and kindly spirit of Scanzoni. He was a man greatly overrun by physicians and others who sought his assistance and patronage; consequently he often had a languid, bored expression. But to those who had his confidence and who were agreeable to him he was a most delightful, true, and unpretentious friend. Whatever success the writer has made in life, for the beginning thereof he certainly is indebted to Friedrich Wilhelm von Scanzoni. PAUL F. MUNDÉ.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, May 19th, 1891.

The President, JOSEPH E. JANVRIN, M.D., in the Chair.

NEW RHEOSTAT.

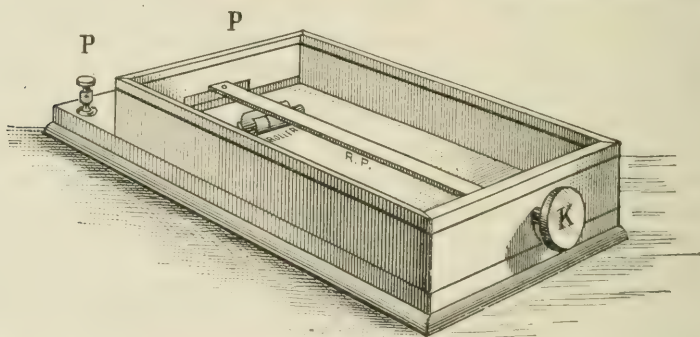
DR. J. H. GUNNING presented a new rheostat, with the following description:

I would respectfully call the attention of this Society to this new rheostat of my device—an instrument, as you know, to be used in electro-therapeutics for regulating the quantity of electricity while the current is being used. It takes the place of the current selector. With this instrument the current can be increased from the merest tremor of the needle upon the dial of a milliamperemeter to the dose to be given; or the entire energy of the battery may be utilized with perfect evenness of current, without shock, and free from the danger of short-circuiting. It will also hold the current at a point indicated on the milliamperemeter until the battery becomes polarized. It differs from all other rheostats in five very important points:

1. There is no glass jar to be broken.
2. The even tension of the floor plate throughout the entire surface coming in contact with the roller insures an even current. There is no jumping or shock to the patient.
3. It has a graded resistance comb or plate, in the form of a triangle, with points of certain resistances and of peculiar composition.
4. It is free from any action that is wearing on the resistance plate, lessening its resistance and thereby destroying it.
5. The impossibility of short-circuiting, thereby endangering the patient by shock from a large quantity of current.

The regulator is composed of the following parts: A frame or base; a glass cover for the frame, to prevent dust from settling on the surface and thus damaging the resistance; a floor plate made of glass, on which is fastened a piece of resistance compound, comb-shaped, over which a roller is made to move by means of a screw having a knob handle. The current is regulated by the passing of the roller over this comb-like piece. When the current is to be used, the roller is turned

down to the point of the comb by means of the knob, and when the roller touches the black point then the current begins to flow, and it may be gradually increased as the surface of the resistance is overcome by the passage of the roller over it, and very gently increased as the various points are touched, until the broad base of the triangle is reached, stopping at a point barely touching the brass connection plate at the base. If an ordinary battery is used, composed of forty Leclanché cells, through a fair resistance of tissue, the roller and brass plate may be brought in contact, with an increase of current of about fifteen milliamperes, thus giving the entire energy of the battery. Before releasing the patient or taking off the electrodes, turn the knob connected with the roller in the contra direction until the roller is quite free from the black plate, when the current is entirely off. This instrument can



be used with both currents (the galvanic and faradic). I have found the rheostat necessary in the application of the faradic current to the pelvic organs, as the only means of bringing a minimum to a maximum intensity without distress or pain.

DR. A. H. GOELET asked whether the screw, which seemed to be a fine one, permitted of turning the current on as quickly as one might desire. Also of what material the conductor was composed.

DR. RALPH WALDO said that his remarks, as far as they might apply to this particular rheostat, would be theoretical, but he thought that any instrument which had a roller in its mechanism, and metallic joints, was likely, especially if exposed to the moisture of the air, to make imperfect contact at places and fail to satisfactorily regulate the current.

DR. JOHN BYRNE asked whether it would control a current measured by amperes, such as is used in cautery batteries.

DR. GUNNING, replying, said the conductor was a composition of three different materials, that the screw worked in the most satisfactory manner, that the wire was only large

enough for about five hundred milliampères, and that the rheostat had not been devised for use with a cautery battery.

MALIGNANT GROWTH STARTING IN AN OVARIAN CYST.

DR. H. T. HANKS presented the specimen, with the following history:

Miss P. G., United States, admitted to Woman's Hospital, New York, May 15th, 1891. Aged 15 years. First menses at 12 years; last, April 17th, 1891; regular; type, twenty-eight days; days flow, seven. Quantity of flow rather profuse for past five months; few clots. Some dark vaginal discharge nearly all the time. Health had been very good till thirteen months ago, when she noticed a small, hard lump about two inches above the pubes, in the median line, which has been growing rapidly. Five months ago patient began to have sharp, darting pains through the abdomen, especially the right side, with a constant dull, heavy, dragging feeling; pain now is very severe and constant.

Patient has been aspirated three times during the past three months; about half the fluid drawn off each time, the abdomen refilling in three to five days. The fluid drawn off was quite dark and not as thin as water. Patient has lost flesh rapidly during past three months, has no appetite, sleeps badly, very nervous, constant headache. Temperature 102° , pulse 100.

Family history negative. Urine normal. Night before operation temperature 103.6° , pulse 110. She had come from Florida by rail, and had been feeling so poorly since her arrival that a very thorough examination was not insisted upon by me. There was the enlargement of the abdomen from the centre, as is the case in a seven months' pregnancy; dulness on percussion in the region of the umbilicus from three to four inches in all directions; some resonance at the left, above ilium; none on the right. Distinct wave, as in ovarian tumor. By conjoined examination found a small uterus crowded into hollow of sacrum, to the left of median line. A distinct cystic feel to the tumor, filling the true pelvis. Diagnosis was made of ovarian cyst, ascites, with peritonitis from leakage of ovarian fluid into abdominal cavity. Dr. Cleveland concurred in this diagnosis, but feared the peritonitis was tubercular.

May 19th, 9 A.M. Abdomen opened; a smooth, firm cyst wall came into view, with two quarts of free fluid in abdomen. Cyst tapped, and fully three quarts of dark fluid drawn off. No adhesions of tumor in front or side, except at a point directly under the umbilicus, where the omentum was diseased and was firmly adherent to the wall above and to the

cyst below. This was separated quickly by cutting out the umbilicus with scissors. The tumor was then removed from the abdomen. The pedicle was large, starting from the right ovary. The base of the tumor above the right pedicle was slightly adherent to a soft, easily broken-down, very vascular, encephaloid-like growth, which proved to be malignant disease of the omentum. This growth was from three to four pounds in weight, and occupied the region of the ascending colon, and was firmly adherent to the colon and to the pedicle of the tumor. In removing this growth many catgut ligatures were used to tie the small blood vessels of the colon which were wounded. The patient was weak and required hypodermic stimulants. The operation lasted one hour. Later brandy and hot-water stimulants per rectum were used before she fully rallied. She remained quite conscious for ten hours, but finally died from shock fourteen hours after operation.

The case is of deep interest, because, first, she was but 15 years old. Second, the disease probably commenced as a benign ovarian cyst, and later the malignant degeneration had taken place in and around the region of the ovary, and later adhesions to the omentum and ascending colon, and finally fatty degeneration and ulceration of base of cyst and general ascites had followed, hastened by more or less leakage into the peritoneal cavity from the incomplete aspiration of the cyst. The adhesion of the cyst to the omentum in front had occurred at the point where the aspirating needle had passed through it, and finally the attachment of this diseased omentum had become adherent to the abdominal wall by lying for a few hours or days in contiguity with this portion of the abdominal wall. Third, the necessity of opening the abdomen early in cases of ovarian cyst in young girls, since, if the disease is malignant, the rule is that it will make much more rapid progress than it will in older patients.

DR. H. C. COE thought that the case was one of undoubted carcinomatous degeneration of an ovarian cyst. It was quite rare to see that condition in so young a patient. He believed that it was not primarily carcinoma, but that the malignant disease developed in a simple cyst, which also was an interesting fact. It was more probable that the growth had perforated the wall of the cyst, that secondary growths had developed in the omentum and transverse colon, but that the tapping had not led to the carcinomatous degeneration. One reason for this belief was the fact that the ordinary place for tapping was at a point midway between the pubes and umbilicus, whereas the solid portion of the tumor, and also the spot at which perforation had occurred, was at the level of the umbilicus. It would be interesting to know why ovarian cysts remained

benignant for years in some patients, while in this young person, who had not reached what might be called the cancerous age, the cyst so speedily became malignant. The association of ascites with the tumor made the diagnosis in this case extremely difficult. The speaker had inclined to the diagnosis of tuberculous peritonitis, because the fluid accumulated so rapidly after tapping, and also from the fact that the patient had a regular evening rise of temperature. The rapid reaccumulation of the ascitic fluid was, however, easily explained by the presence of malignant disease of the omentum; the temperature was to be accounted for by the acute peritonitis which was present.

DR. G. M. EDEBOHLS asked Dr. Hanks whether he was able to remove the entire growth from the peritoneal cavity. Only yesterday he had refused to operate on a patient, aged about 42, with evident sarcoma of both ovaries. He had examined her carefully under ether, and had come to the conclusion that the tumors were attached to the pelvic walls, and to the abdominal walls above the brim of the true pelvis, so that it would have been impossible, he thought, to remove the entire growth. He thought that in cases of suspected malignant growth one should make more than an ordinarily careful examination, to learn, before attempting operation, whether it would be possible to remove it entirely.

DR. J. R. GOFFE said that Dr. Coe's remarks reminded him of a case which was in marked contrast with this one, so far as its tendency to take on a serious turn was concerned. The woman lived in Brooklyn, had an ovarian tumor, and he advised an operation; but she declined, saying that she had been told the same thing six years previously by Dr. Peaslee, who had expressed the opinion that she could not live two years unless it were removed. There was still no impairment of health.

DR. CLEVELAND said that, having seen this patient with Dr. Hanks, he supposed at first that it was a case of tubercular peritonitis; but after making bimanual palpation he felt positive that there was an ovarian tumor, probably to the left side of the uterus, which it had pressed down into the right iliac fossa. There was evidently a good deal of ascitic fluid, the presence of which was confirmed by the operation. He had no thought, however, of there being malignant disease, and was surprised at the great amount of ascitic fluid which escaped.

Besides the fact of the development of malignant disease upon what probably at first was a simple ovarian tumor, it was interesting to see how the disease had extended from one organ to another by mere contact.

DR. HANKS thought Dr. Coe's explanation of the involve-

ment of the transverse and ascending colon by extension of the disease from the base of the tumor was of course correct, but he believed the omentum had been pierced at one of the threeappings, and then took on a malignant inflammatory process from leakage of poisonous fluid through it, and thus caused attachment and extension to the abdominal wall near the umbilicus, rendering excision of this part of the wall necessary at the time of the operation. He recalled a statement of Dr. Thomas with regard to the rapid progress of malignant disease in young girls as compared with its progress in older women. He recalled another case of malignant disease in a girl of 17 which proved fatal in about eight months. In reply to Dr. Edebohls' suggestion that one should not operate where all the diseased tissue could not be removed, he said they had no thought of the great extent of the disease in this case. He felt, before the operation, very positive of the presence of an ovarian cyst, and supposed there was some inflammatory process which would account for the ascites, but had not expected to find the extensive malignant disease. Replying to interrogatories, he said the patient was a white girl, was emaciated, but did not have the cachexia of one who had suffered long from malignant disease.

DR. CLEMENT CLEVELAND read the history of a

CASE OF SUPPOSED ABDOMINAL PREGNANCY.

I wish to recall the history of a case which promised, in the beginning, to be one of extraordinary professional interest. It is that of a lady who came to my office on February 2d of this year, presenting the following history:

She was 24 years old, and had been married one year and a half. Her menstrual life began at 14, and was irregular up to the time of marriage. The menses were of four to five days' duration, normal in quantity, and not attended with pain.

Her last mensis occurred July 17th, 1890. There had always been more or less leucorrhea, which had been profuse since the menstruation in July. She believed herself pregnant at about the sixth month. For several months she had suffered with pain, a dull ache, running down the right leg.

She had been constantly under professional care, but I believe there had been some doubt whether she were pregnant or not, till she felt life in the latter part of November.

She had had none of the early signs and symptoms of pregnancy, which added to the mystification of the case.

She informed me that from the first the enlargement was confined to the left side and continued to develop there, and

the movements of the child were also entirely on that side. After the fetal movements commenced, she was conscious of a rapid increase in her size.

She stated to me that a week before she had been examined at her home by gentlemen whom I know all about and know to be men of excellent training, and who decided that the child was in the abdomen, entirely outside the uterus.

I then examined her, with the following result:

To her right was a mass which in shape and size felt like a uterus at about the third and a half month of utero-gestation, and continuous with the cervix, which was large, patulous, and carried to her left. To the left and above this mass a living child could be felt, and so distinctly that the impression conveyed was that the child was in a very thin-walled cyst; there appeared to be hardly more than the thickness of a sheet of paper between it and the hand. The head of the child was in the left iliac region, high above the brim of the pelvis.

I came to the conclusion that it was a case of abdominal pregnancy advanced to about six months and a half, and that it would be necessary sooner or later to open the abdomen.

She was prepared for the statement, as it was the same as given to her at her home.

I sent her to the Woman's Hospital as a private patient, where she entered that same day. Though I felt positive of the diagnosis, I made up my mind that, as the patient was in good condition and the child vigorous, there was no hurry; that it would be better to leave her till the eighth and a half month. I decided, however, to have everything in readiness in case of rupture of the sac, so I could be ready to open the abdomen at a moment's notice. At the end of a week, after examining her again, still believing the diagnosis correct, I asked Dr. Nicoll to see her with me. After careful examination he made the same diagnosis. He concurred in my decision to wait. Though we both felt positive in the belief of the diagnosis of abdominal pregnancy, we admitted the possibility of there being a mistake.

We felt complete mastery of the situation from the fact that we could at any moment decide the question by putting the patient under ether and passing a finger into the uterus, and this I, of course, should have done before opening the abdomen, in any event.

I examined her from time to time, usually twice a week. After a couple of weeks I began to be aware of a change in the shape and size of the mass, supposed to be the body of the uterus, on the right. It was growing larger and losing its distinctly pear-shape feel; after two weeks more it had disappeared entirely, lost in the sac containing the child,

and the child's head had descended into the pelvis. Another point I should mention here, and that is that after the sensation of the very thin separation between child and hand had disappeared, there seemed to be the usual or ordinary amount of separation, as if the left horn had at first been dilated or stretched, and had afterward regained its proper thickness. It then became clear, and of this I had already become suspicious, that the diagnosis was incorrect; that I had to deal with a double-horned uterus, with the child developing in the left horn, the right remaining almost stationary in its growth till the child had descended below the septum. I told Dr. Nicoll of this and asked him to see her again, which he did, and found the condition as I state it here, and concurred in my belief that the uterus was bicornate.

To cut the story short, I was called to her on the morning of the 8th of April, and found that the membranes had ruptured and that the liquor amnii was slowly coming away. I found the os patulous, and passed my finger in, touching the head of the child. There were no uterine contractions till twenty-four hours later, when I was called again and found labor had commenced in earnest. In spite of regular uterine contraction, as I feared from the premature rupture of membranes, at the end of six hours there was no advance, no appreciable enlargement of the os. The patient was becoming much exhausted, and, fearing a long, tedious labor, without interference, the patient was anesthetized, the os dilated with Barnes' dilators, and the child delivered with forceps, and ergot given. After firm tonic contraction had taken place, I examined and found what I expected, a uterus bicornis. There was the depression at the centre of the fundus, with a horn projecting to either side.

She made an uneventful recovery, and returned to her home a short time ago.

DR. COE said that he had recently seen a case in consultation out of town in which it was equally difficult to decide whether the fetus was inside or outside of the uterus. The patient was supposed to be at full term, and had for several weeks had serious trouble with her kidneys, having a few days before had complete suppression for twenty four hours. Irregular labor pains had continued for two days, but the cervix did not dilate, and they finally ceased, the uterus remaining entirely relaxed, while the patient could no longer feel fetal movements. When she was seen by Dr. Coe she was in a fair condition, the temperature being normal; the urine contained a trace of albumin, and the daily quantity was considerably diminished. Palpation of the abdomen showed that the uterus, which was enlarged to a size corresponding with the eighth month of pregnancy, was so

relaxed that it was impossible to distinguish the boundaries of the organ. The fetal parts were felt with startling distinctness, the bones of the head crackling under the fingers in that peculiar manner characteristic of a macerated fetus. The speaker at first thought that he had to do with an abdominal pregnancy, but abandoned this view on making a vaginal examination, as ballottement was obtained, the presenting part being supposed to be a breech. The cervix did not admit the tip of the finger. He introduced a large-sized tupelo tent, and left his largest Barnes' bag with the attending physician, to be inserted when the proper amount of dilatation had been obtained, believing that no difficulty would be encountered in emptying the uterus. Forty-eight hours later he was summoned in haste, and found the patient in a serious condition. The water bag had ruptured, and all attempts to dilate the rigid os had been unsuccessful. The woman had a rapid, feeble pulse, elevation of temperature, persistent vomiting, and it was evident that active interference ought not to be postponed. She was stimulated with hypodermics, chloroformed, and a prolonged attempt was made to overcome the rigidity of the cervix, the upper portion of which was like an iron ring. Steel and hard-rubber dilators were alike useless. After making a number of linear incisions, Dr. Coe was able to introduce three fingers only and to remove piecemeal an adherent placenta previa. The macerated fetus was situated high up near the fundus, apparently in a cavity by itself, and was delivered only with the greatest difficulty. The hemorrhage was not excessive, and was promptly controlled by an intra-uterine tampon of iodoform gauze, the uterus contracting firmly. After the organ was emptied, the speaker introduced two fingers and discovered that there was a small rupture in the posterior wall near the fundus. Whether this had occurred before or during the operation it was impossible to state; it was quite probable that it was due to the manipulation of the fundus during the attempt to insinuate the fingers through the os, the fetal head being actually forced through the thin, flabby uterine wall. An absolutely bad prognosis was given at the beginning of the operation, on account of the weak condition of the patient. She sank rapidly, and died of shock an hour afterward, the uterus remaining firmly contracted.

DR. JEWETT presented the

FETUS FROM A CASE OF TUBO-UTERINE GESTATION

which he had reported at the previous meeting. The fetus measured seven inches in length, weighed four ounces and two drachms, and was believed to have reached about four and half months' development.

He also presented the uterus and appendages from a case of simple tubal pregnancy which had ruptured at about six weeks. He had brought it to the meeting because the shape of the uterus bore upon the diagnostic point recently proposed by the President, Dr. Janvrin. Dr. Janvrin had suggested that the uterus in tubal pregnancy does not develop antero-posteriorly to the same extent as in utero-gestation; that it grows mainly in width and remains flattened from before backward. This point, if substantiated, would be a valuable one in the diagnosis of extra-uterine pregnancy. The uterus now presented, on casual examination seemed to illustrate the fact he claimed. It measured, however, three inches in length, one and three quarters in width, and one and one-quarter inches in thickness. It did not bear out the theory referred to. The question must be settled by further observations.

It occurred to Dr. Jewett that the development of the uterine mucosa in tubal pregnancy would give rise to as much antero-posterior thickening at about the fourth or fifth week as would be found in utero-gestation. The anterior and posterior walls of the non-gravid uterus lie in contact. The growth of the mucous membrane would lift the anterior from the posterior wall, and would thus increase the antero-posterior thickness of the uterus in the first few weeks, even when no ovum is present in utero. Later on, at the sixth or eighth week, Dr. Janvrin's point would probably be of more value in distinguishing between intra-and extra-uterine pregnancy, for by that time the growth of the ovum would give rise to a more marked antero-posterior thickening than the mere development of the mucosa could do. In short, very early in pregnancy of any variety the increased thickness of the uterus is due mainly to the growth of the endometrium; later the thickness remains nearly stationary in extra-uterine gestation, while in normal pregnancy it grows with the growing ovum.

DR. HANKS said he would have thought, from simple examination of the uterus presented by Dr. Jewett, that it was not enlarged differently from what one saw in moderate subinvolution.

DR. JEWETT said that by measurement the only increase was in the antero-posterior diameter.

THE PRESIDENT said that in the three cases in which he had made his observations the tubal pregnancy was not earlier than the fifth nor later than the seventh week. Whether a like change took place before the fifth or sixth week would have to be determined by further observations.

DR. COE said that the change in the transverse diameter of the corpus uteri, described by the President as characteristic

of ectopic gestation, must be one which could be positively determined clinically only under the most favorable circumstances. If ectopic pregnancy occurred in a patient whose uterus was already enlarged in consequence of chronic endometritis or subinvolution, it would hardly be possible to make out the delicate shade of difference between the antero-posterior and transverse thickening. He asked the President if he did not assume that the peculiar enlargement could be recognized only under the most favorable conditions, *i.e.*, in nulliparæ.

THE PRESIDENT replied that he thought the rule which he had in mind would certainly apply in all cases where the uterus was of normal size before gestation. The diagnostic point would be difficult to recognize if there were subinvolution at the time of impregnation.

DR. G. A. KLETZSCH read a paper entitled

A CLINICAL REPORT OF TWO CASES OF REMOVAL OF THE
OVARIES, WITH INTESTINAL LESIONS.¹

DR. COE referred to two or three points in the paper which had impressed him as being of special interest. The first was that there might be extensive intestinal adhesions with few symptoms pointing to their existence. He had seen cases in which the intestines were literally knotted about a tumor, yet the bowels moved every day and the patients complained of but moderate pain. The amount of pain was by no means directly proportional to the firmness and extent of the adhesions. Another point was, that in separating adherent ovaries and tubes an extensive raw surface might be left on the intestine, and the question arose, What was the best course to pursue? When the serous coat was stripped off over an area of several inches, there was danger not only of fresh adhesions taking place, but also of intestinal paralysis. He had had a patient die from simple paralysis of the intestine, due to the stripping off of three or four inches of the serous coat of the colon, without any evidence of septic infection or peritonitis. If one adopted the plan of closing in the raw surface with sero-serous sutures, he would run the risk of contracting the lumen of the gut; on the other hand, resection seemed to be a pretty severe method of treatment, especially when the patient was already suffering shock from a long and difficult operation. It was hardly possible to lay down any general rule; one would have to determine what course to pursue according to conditions present at the time. The ordinary practice in many cases had been to apply a firm intra-peritoneal tampon against the raw surface, especially when

¹ See original article, page 931.

its location was along the sigmoid flexure; but there was great danger of adhesions forming even under that treatment. If it was not used, there would be danger of hemorrhage; if left in, it might prevent the bowel from moving. The speaker confessed that he was still in the dark regarding the exact indications for resection after injury of the gut.

DR. BUCKMASTER suggested that it might be well for a time to make an artificial anus, and thus give the segment of bowel which had been so extensively denuded a rest. Of how much help that would be he was unable to say; but not having heard it suggested before, it occurred to him to mention it.

DR. CLEVELAND said that, besides the two cases related by the author of the paper, he could recall two others in which he had separated extensive adhesions existing between the sigmoid flexure and diseased tubes. In one case a fecal fistula formed, followed by death. In the other there was also a fecal fistula, which existed some weeks, then closed, and the patient got well.

He had come to the conclusion that where the intestine had lost much of its serous coat, and possibly a part of its muscular coat, it was a great deal safer to remove a portion of the gut and do enterorrhaphy than to sew up the rent and leave the diseased intestine to break down, as it was likely to do, and kill the patient or form a fecal fistula. He was determined that if in another case a rent should take place in the adherent portion of the intestine, which he would regard as a pretty certain indication that the gut was diseased, he would, instead of sewing up the tear, remove a portion of the gut and do enterorrhaphy, feeling from his past experience that it would give the patient a better chance of recovery.

DR. A. P. DUDLEY asked Dr. Cleveland if he would pursue that course where the tear was low, say in the sigmoid flexure.

DR. CLEVELAND thought not, if it were in the sigmoid flexure; that he had in mind cases where the intestine was really diseased from contact with a pus tube.

DR. H. J. BOLDT said that, in his experience, when the intestine was in contact with pus tubes to the extent Dr. Cleveland had in mind, it was invariably diseased. The walls of the gut were thickened and diseased from extension of the inflammatory process in the tube, and there was great risk not only of stripping off the serous coat, but of tearing into the lumen. In one such case he had torn into the sigmoid flexure and resected the gut, but the patient died. He believed it would be safer than sewing up the rent through the thickened and unhealthy tissue, to perform enterorrhaphy by anastomosis, and that one should always be prepared to do this operation.

DR. H. MARION SIMS did not doubt but what resection was the best procedure to resort to in these cases. He recited two instances, the first illustrating the wonderful reparative power of Nature, the other the want of such reparative power. Five weeks ago he had occasion to remove a very large pyo-salpinx, with adhesions everywhere. The sac burst during the operation, and the entire abdominal cavity was flooded with most disgusting-smelling pus. The descending colon was firmly adherent to a portion of the sac, and in separating it he tore through fully four inches of the serous coat. There was one spot in the gut which all of those present thought to be gangrenous, yet it was so late in the afternoon, and the operation had lasted so long, that he took the risk of not doing resection, but left it. The abdomen was washed out with boracic acid solution and hot water, and the patient was put to bed to die, as it was thought, for none expected her to live. To their astonishment, however, she had not a bad symptom, and made a good recovery. There had been one point in the apparently gangrenous portion which was almost through, and perforation had been expected; but, recovery taking place, he could only infer that an exudation formed and shut off the gangrenous-looking area.

In contradistinction to this case was one which he had operated upon two weeks ago. The patient had what was supposed to be volvulus. On examination he found a large tumor filling the whole left pelvic cavity. He had supposed there was an enormous pyo-salpinx, such as he had seen once or twice before, causing pressure on the descending colon or sigmoid flexure. The patient had had no movement for nine days. He operated early next morning, and found, instead of a pyo-salpinx, a large abscess of the meso-colon, filling the pelvic cavity. There was also a distinct volvulus, the descending colon being doubled upon itself and twisted once around. He separated the intestinal adhesions about the abscess, cleansed the cavity, untwisted the gut, but found it in almost as bad a condition as in the previous patient, with a gangrenous appearance at one place which strongly tempted him to do resection. The serous coat had been unavoidably torn. Remembering the success of Nature's efforts in the other case, he did not resect. The patient did well for five days, had no rise of temperature, but at this date fecal matter discharged through the drainage tube, which showed that perforation had taken place. The patient was by this time so exhausted that it would have been useless to resect, and she died of peritonitis.

Replying to an interrogatory by Dr. Cleveland, he said he thought enterorrhaphy would certainly have given the patient the best chance.

DR. A. P. DUDLEY said he had had considerable experience with adhesions between the intestine, tubes, and ovaries, and had seen quite a number of cases in which the intestine had been injured, and some in which it had been perforated. He approved of the position taken by Dr. Kletzsch and by Dr. Cleveland, but thought enterorrhaphy should be resorted to only when the injury was at a place where the intestine could be easily handled. If it occurred low down, in the rectum or sigmoid flexure, enterorrhaphy would prove a difficult operation and would complicate the case greatly. He had treated at least four cases in which large holes had ulcerated into the sigmoid flexure at points where there had been a good deal of thickening about the tubes. They were cases, however, in which much time had been taken in getting out the disease, and to have prolonged the operation by making intestinal anastomosis would have cost the patient's life. In those cases he had secured a perfect result by bringing the intestine into view, scraping the diseased tissue thoroughly, and bringing the surfaces together with fine silk suture. In one of the four cases he shortened the cul-de-sac an inch or an inch and a half by stitching the anterior surface of the sigmoid flexure to the posterior wall of the uterus. The opening in the intestine was complicated by an opening into the cellular tissue in the cul-de-sac behind the uterus. The latter opening was curetted thoroughly, allowed to bleed freely, and then was sewed over. As said, all these patients recovered. He thought that excision or anastomosis would be proper if the injury were high up where it could be easily got at. He had never had the misfortune to rupture the intestine in removing adhesions about the uterus, but had treated a number of cases in which the pyo-salpinx had ruptured into the intestine, the ulcerated surface being from the size of a nickel to two or three inches long. In those cases he had, after curetting, brought the peritoneal surfaces together in line with the intestine, and secured a good result. He had not employed drainage. He had kept the bowel open with a saline cathartic. In his last case, of which he had presented the specimen, had he been able to do resection or anastomosis, it would have been the proper way to pursue, and he thought would have saved the patient's life. It was a second abdominal section, the first one, by another surgeon, having resulted in a fecal fistula. He was unable to judge of the amount of stricture of the intestine at the time he made the second operation. Had he known the degree of stricture existing, it would have been apparent that fecal matter could not pass through, and he would have resorted to some other course. The stricture had lasted so long that on both sides the gut was largely dilated; the walls were too thin to venture anastomosis; the mesentery

was about an inch thick with fat. To resect the intestine would have made it necessary to take out the cecum and ileocecal valve and at least two inches of the intestine on both sides. To have united the two portions at that point would have been a very serious undertaking. He might possibly have made anastomosis high up, between the ileum and ascending colon, but he reasoned that if he had done this there would have been a collection of fecal matter below to result in secondary fecal abscess and death. He therefore simply sewed up the opening, but lost the patient within thirty-six hours from one of the five perforations that were sewed up reopening and allowing fecal matter to enter the peritoneal cavity.

DR. EDEBOHLS had never had the misfortune to wound either the intestine or bladder at his laparatomies; consequently he had never been put to the strait of having to undo the accident after it had occurred. He had always felt in this matter that an ounce of prevention was better than a pound of cure. It seemed to him that it was one of the disadvantages of adhering to what he might speak of as the English and American method of operating for the removal of diseased appendages by making a small incision, introducing two or three fingers into the abdomen, and separating everything by the sense of touch alone. One ran more risk in doing this than in making a somewhat larger incision, elevating the pelvis, letting daylight in, and thus having, in addition to the sense of touch, the aid of sight in freeing the diseased appendages from their adhesions. He had always felt almost positive that, with the aid of Trendelenburg's position, a fairly large incision, say ten centimetres, and cautious work, it would be possible to avoid injuring the intestine. The accident had never occurred to him, and he had used Trendelenburg's position in nearly all his cases.

DR. BUCKMASTER remarked that, when the short incision had come to be called the English and American method, Trendelenburg's posture was not known or had not come into general use. At present no one would reject this method and get the benefit of light which it afforded in certain cases.

THE PRESIDENT thought that the best thing to do, when the laceration of the serous coat was small, was to let it alone. Even if an inch or two inches long, the intestine would probably take care of itself; at least that had been his experience. He had seen a large number of such cases years ago, before abdominal surgery had reached its present degree of perfection, and it was then the custom to let the injury alone, and in the majority of cases recovery took place. He had in several cases torn into the rectum and into the sigmoid flexure, but had sewed up the rent, and no unfortunate result had

followed. In a case which he had operated upon at St. Elizabeth's Hospital three years ago, the large ovarian cyst had become adherent to the descending colon; a small opening existed, through which fecal matter regurgitated back and forth between the intestine and ovarian tumor. There he did as Dr. Dudley had described—cleared away the diseased tissue of the intestine very thoroughly, and brought the parts together; but the patient did not recover, but died of shock within twelve hours. If the rent were higher than the sigmoid flexure, and entered through the gut, he thought resection should be performed.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, March 20th, 1891.

The President, W. W. JAGGARD, in the Chair.

DR. FRANKLIN H. MARTIN read a paper on

VAGINAL HYSTERECTOMY FOR CANCER.

There are six distinct methods of operating: First, Czerny's; second, Olshausen's; third, Müller's; fourth, Fritsch's; fifth, Winckel's; sixth, Péan's.

Questions which are still unsettled, and which the author considered should be thoroughly discussed, are: First, methods of treating wound and broad-ligament stumps; second, forcipressure versus the ligature in securing the stumps; third, limits of the operation for cancer, upper and lower; fourth, immediate mortality of the operation; fifth, ultimate results.

The methods of treating the wound and the stumps seem to be, as far as results are concerned, simply a matter of taste, as operators with equally brilliant records differ radically in regard to this point. Kaltenbach, Olshausen, Mikulicz, Teufel, Tauffer, Winckel, Schauta, Slawjanski, Martin, Czerny, and the majority of the older operators, favor the closing of the peritoneal edges and the vaginal opening, while some of the later operators, and especially those of America, favor the open, or the partially open, wound, with a loose drain of iodoform gauze. Among the latter may be mentioned Byford, Montgomery, Boldt, and Reed. In my cases I have

made no attempt to close the peritoneal or vaginal openings further than to place the tissues in position, so that the natural collapse of the parts would bring like tissues in coaptation. The tendency of late, however, among all operators seems to be towards an attempt to at least completely close the peritoneal opening with sutures. It certainly appeals to one's sense of the surgical fitness of things. Schauta (Prague), who has operated sixty-five times (1890) with five deaths, says on this subject: "The method which has given me the best results is the one in which all stumps are placed and fixed strictly extraperitoneally, and with complete closure of the supravaginal wound and of the peritoneal cavity." Kaltenbach (Halle), who has operated eighty times (1890) with but two deaths, says: "I think it is a fundamental condition of success that the peritoneal wound be closed. From my first operation I have always closed the open wound completely. . . . I cannot reconcile myself to drainage of the abdominal cavity. There is nothing there to be drained. One of the most important points is to keep the dangerous supravaginal wound everted toward the outside. Cases of illness have occurred when the peritoneum has been left open." Ols-hausen (1890) has dropped the pedicles and closed the vagina below the stumps. This he has done in twelve cases. One of these died. The others recovered, not all without accident, for some had abscesses and fever, with perforation of the abscess into the vagina and rectum. "But this should not frighten us," he says; "only the procedure must be still further perfected."

Forcipressure versus the ligature is a question which does not seem to be settled. The drift of opinion among those who have employed both methods seems to be towards limiting the use of forceps to those cases in which there is some special indication for their use, and at all other times to employ the ligature. The special indications for their use may be summed up as follows: First, shortening the time of the operation; second, the greater facility with which they may be applied in case of a narrow vagina; third, the possibility of applying them to ligaments when the uterus is held high in the pelvis; fourth, to facilitate drainage in the open-wound method.

The contra-indications may be summarized as follows: First, the difficulty in all cases of including the ligament in one pair of forceps, and the necessary crowding of the vagina with several pairs after both sides are cared for; second, the difficulty in obtaining complete hemostasis in all portions of a large ligament included in the grasp of one pair of forceps; third, the danger of almost certain and fatal hemorrhage in case of an accidental unlocking of the forceps and the yielding of

the grasp in spite of the tied handles ; fourth, the danger of ulceration into surrounding organs (bladder and rectum) from prolonged pressure ; fifth, the danger of the forceps breaking at the lock from oxidization, and precipitating hemorrhage shortly after their application ; sixth, the danger of leaving a route along their track of application for infection of the peritoneal cavity before or subsequent to their removal.

Among those favoring employment of forceps abroad are Péan, Richelot, and L. Landau (Berlin). The latter says (1890) : " No single method is so generally applicable as the one for which we are indebted to Péan—that of forcipressure. I have tried the other, too, but the experience with the new one is so incomparably better that I shall not give it up. It can be performed in an incredibly short time. . . . Indications can be met with this operation which could not be met with others ; even fixed uteri can be removed by it."

Among those favoring forcipressure in this country may be mentioned E. C. Dudley and H. T. Byford, of Chicago ; H. J. Boldt, of New York ; Hall and Reed, of Cincinnati ; Montgomery, of Philadelphia, and others. In 1888 Dudley favored this operation for the following reasons : "(1) The operation is made short and simple ; (2) hemostasis is prompt and reliable ; (3) turning the cervix into the peritoneal cavity and bringing the corpus uteri into the vagina are not necessary ; (4) the sloughing stump, if left in the vaginal wound below the peritoneum, comes away much more quickly, and a clean granulating surface takes the place of a gangrenous wound ; (5) effective drainage is secured by means of the forceps ; (6) convalescence is less complicated ; (7) the operation gives promise of reducing the mortality to four or five per cent or less." These were Dr. Dudley's views in 1888. Dr. H. T. Byford, who was the first to invent a hemostatic forceps, with the required strength and the pelvic curve, for this purpose—the forceps which is now almost universally employed, when any is used at all—seems more and more to regard the ligatures as the safer of the two. He has not entirely laid aside the forceps, but it is noticeable that he secures about everything that is liable to give much trouble in the way of hemorrhage with strong silk ligatures, reserving the forceps for the upper margin and less important portions of the broad ligaments. In my opinion more stress is laid on the part that the hemostatic forceps plays in shortening the operation than is warranted by the facts. I have found in a number of instances cases in which there were large, thick broad ligaments in which several ligatures could be applied in much shorter time than it would require to apply the forceps. In the first operations which I performed I struggled hard to apply the forceps to the entire ligament. I succeeded,

but in each instance I was obliged to reinforce the first pair, either at the upper or lower margin of the ligament, with one and oftener more pairs of smaller forceps. After a time it seemed better to ligate the large, bulky base of the ligament with one or two silk ligatures, and sever it to that extent, and then apply the forceps to the upper thin portion, which it had no difficulty in securing. I am now positive that in the majority of cases the ligatures can be applied as rapidly, if properly understood, and with greater security than the forceps; and when other obvious advantages of the ligatures are taken into consideration, I am not sure that I would not, in the majority of cases, prefer them to the forceps. It seems to me that, in the not far distant future, the forceps, like division of the uterus after Müller, or the turning of the fundus backward, will be resorted to only in cases where special indications arise and the use of the ligatures for some reason is impracticable. Pozzi (Paris), 1890, said of the use of forceps: "In exceptional cases this method may be used; it is a procedure determined by necessity, not by choice. If ligation be possible it is preferable, for the statistics of cases operated on according to the forceps method are bad. Forceipressure acts also on the bladder. The pressure on the intestines has sometimes led to their laceration, occlusion, and adhesion. It narrows the field of operation and hinders the removal of the adnexa which occasionally is necessary. Finally, it prevents proper antisepsis, by the necrosis of the tissues included in the bite of the forceps."

Keith says, in January, 1891, on this subject: "The practice of securing the broad ligaments by strong-locking forceps, or even by especially constructed clamps, and letting these remain on for several days or until they drop away of themselves, does not commend itself to me as good surgery."

Limits of Vaginal Hysterectomy for Cancer.—One of the most interesting questions at present, since the justifiability of this operation for cancer is admitted, is its point of limitation when cancer of the uterus exists. In other words, how much must a uterus be involved before the operation for its removal is justifiable, and, on the other hand, how extensively must the tissues be involved before we reach the limit beyond which the operation is no longer justifiable?

In exploring the literature of this subject which has accumulated since Czerny's first case, we find that the field, as bounded by the upper and lower limits of this operation, has constantly broadened, until to-day it is far from heresy for one to make the lower limit at the earliest possible date at which carcinoma of any portion of the uterus (no matter how minute) can be accurately diagnosed by means of the micro-

scope, and to place the upper limit at the point beyond which it is no longer possible to remove the organ with a reasonable chance of primary recovery.

So far, in following the evolution of this operation, we have found first the operation grudgingly tolerated in extensive cancerous development in which the disease had not passed the limit of the uterus. Then we found it tolerated in a few cases of high cervical disease, reserving for high amputation all cases where the disease was apparently cervical. Now we will find in our next step advocates of the radical operation in all cases, no matter how minute the point in which carcinoma can be recognized. Finally we find a still further extreme in which the operation is advocated in cases of doubtful diagnosis. This is the turn the subject took at the Cincinnati meeting, 1889, of the American Association of Obstetricians and Gynecologists. E. E. Montgomery, of Philadelphia, read a paper on the subject, in which one of his four conclusions was "that in all cases of cancer when confined to the uterus, whether of the body or cervix, vaginal hysterectomy is the only justifiable operation." In another we read: "When the condition is one of doubt the patient should be given the benefit of the doubt, and the organ removed."

Wathen, of Louisville, and Reed, of Cincinnati, substantially agreed with Dr. Montgomery in regard to his first conclusion which I have quoted, and did not openly deny the propriety of the second. The paper was also discussed by Vander Veer, of Albany, Joseph Price and Hoffman, of Philadelphia, and not a word of objection was uttered to the extreme views by any one.

In May, 1890, I read a paper before the Gynecological Section of the American Medical Association, in which I endeavored to support the two following propositions: first: "Vaginal hysterectomy is the most justifiable surgical procedure we yet know for the cure of cancer of the uterus"; second: "Vaginal hysterectomy should be attempted for the cure of cancer of the uterus at the earliest possible moment after the disease is diagnosed." With the exception of one or two objectors, I found the Section with me.

Following, however, in August, at the Tenth International Congress, the subject was done full justice, and the experience with this procedure which was represented there lent great weight to the words which were uttered. That this Congress was in favor of the operation there is no chance to doubt. Fritsch (Breslau), John Williams (London), Schauta (Prague), Pozzi (Paris), Olshausen (Berlin), Martin (Berlin), Landau (Berlin), Slawjanski (St. Petersburg), Kaltenbach (Halle), Duevelius (Berlin), Kellman (New York), Czerny (Heidel-

berg), Fränkel (Breslau), and Péan (Paris), representing in the aggregate an experience of over one thousand cases, favored without question the operation as a legitimate procedure of great importance.

The question then was one of limit. Williams would perform the operation in all cases of cancer of the uterus where the organ was not too large, and mobile and free from adhesions.

Schauta called attention to the fact, which has been demonstrated, that in apparently strictly local disease of the cervix cancerous foci were present in higher portions of the cervix or the body of the uterus. He was able at the time to cite seventeen cases which had been reported. In my own short experience with this operation I have had one such case, which I had the honor to put on record before this Society. These cases belong to the class of which Fritsch said at one time that a single one would decide the question, whether total extirpation or partial amputation should be done, in favor of the former. Schauta, therefore, places the lower limit of the indication for hysterectomy so as to include every case of cancer of the uterus as soon as it can be recognized. He then rejects amputation altogether for cancer, if hysterectomy is possible. This operator, too, pushes the upper limit of the operation beyond the point ordinarily recognized as correct. He considers it questionable whether we should not give a patient the moral support afforded by an operation, even if we are quite sure that we cannot go beyond the disease. He also questions whether we are not able to prolong life somewhat by diminishing pain and sloughing. He admits that the operation must be more dangerous in these cases, and that life may be shortened in a few instances in consequence. He argues that in not a few cases of apparent cancerous infiltration of the broad ligament the deposits may be of an inflammatory nature alone.

Pozzi stated the prognosis of ultimate recoveries after these operations to be, according to the latest statistics, between forty and fifty per cent. This operator is against supravaginal amputation because we are unable to state with certainty when the disease has not extended to the uterus. As to the upper limits he says: "The operation should be performed only in cases in which the disease has not passed beyond the limits of the uterus."

Olshausen summed up as follows: "The primary results must differ according to the limits accorded the contra-indications. Still, even if the limits of the indication be liberal, the mortality may be reduced to ten or fifteen per cent. . . . The final results—that is to say, the permanent cures—are, of course, far more unfavorable; but an earlier diagnosis and

operation will secure better results in the future. Patients who are not radically cured suffer less after the operation than the patients not operated upon; this is due to the absence of hemorrhage and discharges. Exceptions to this rule occur."

Landau thinks "indications can be met with this operation which could not be met by the other; even fixed uteri can be removed by it, if the disease has not extended to the uterus." As to the upper limits he says: "The operation should be performed only in cases in which the disease has not passed beyond the limits of the uterus." Nineteen out of forty of his cases survive after two years, free from relapse.

Slawjanski believes "even in the neglected cases the operation should be done; for though relapse may occur rapidly, the subjective well-being of the patient is secured by it."

Martin says:

"We must gradually come to the point of performing the operation in cases where every other mode of treatment has failed, and large losses of blood and other troubles extending over years have reduced the patient and made it impossible for her to enjoy life. I am convinced that as we have extended the indication in other fields, so it must be in this."

Immediate Mortality.—The immediate mortality of this operation in the hands of expert operators can as yet only be estimated. In the hands of the expert it promises to go below the mortality of simple ovariectomy. The mortality of the operator having the largest number of cases to his credit in this country, as shown in my collection of cases of last year, was five per cent in twenty cases. The operator is H. T. Byford. The next highest operator, H. J. Boldt, of New York, had a mortality of 6.6 per cent in sixteen cases. Slawjanski (St. Petersburg) had seven deaths in his first forty cases and only one in his second forty. Kaltenbach has had eighty cases, with two deaths, or 2.5 per cent mortality. A. Tauben (Arch. f. Gynäk.), from June, 1883, to the middle of November, 1889, collected one hundred and three total extirpations at the Breslauer Universitäts-Frauenklinik, of which ten died, making a mortality of 9.7 per cent.

The mortality of the operation shows a rapid decrease from year to year. I am sure I am not overstating the facts if five per cent mortality is put down as the average mortality of the future of this operation in the hands of a good surgeon.

Ultimate Results.—John Williams (already quoted), after a thorough study of all obtainable statistics, put the average per cent of permanent cures at twenty-eight per cent in 1890. Schauta (1890) claimed 47.3 per cent definite cures, all cases counted as cured after three years had elapsed without return. Pozzi put the percentage of permanent cures at forty

to fifty per cent. These results are, of necessity, tainted with the old conservatism which would not allow of the radical operation until the case was ripe, as it were, or until high amputation and all other forms of procedure had been discarded as too late. At the same time they seem surprisingly favorable. In the face of these, the fact that women in the future will be able to obtain this operation early leads one to predict a permanent cure in at least fifty per cent.

From this imperfect and hasty study of this very interesting subject I will subjoin the following conclusions as representing to my mind the present status of the subject :

1. Vaginal hysterectomy is a legitimate surgical procedure.
2. Each case should be a law unto itself as regards the method to be selected for the accomplishment of the operation.
3. The future will demonstrate that ligatures are preferable to any form of lock forceps for securing the broad ligaments. Forceps will be reserved for emergencies where they must be employed as the least of two evils.
4. Unless there are special indications for drainage, the peritoneum should be as carefully closed as after an abdominal operation.
5. The stumps of the broad ligaments should be everted towards the supravaginal opening and drained antiseptically.
6. Vaginal hysterectomy should be performed for all cases of cancer of the uterus when it is still practicable to remove the organ without materially increasing the mortality, and should be adopted at the earliest possible moment after the diagnosis has been made.
7. The immediate mortality of this operation in the hands of surgeons should not exceed five per cent, and in the hands of experts it should be still further reduced.
8. The future ultimate results of this operation, after physicians recognize the importance of early diagnosis and early operation, will reach a much more favorable percentage than that recorded by the past.

DR. J. H. ETHERIDGE, in opening the discussion, said : I had hoped to hear a little more of Dr. Martin's own peculiar way of dealing with these cases, and something of his own experience concerning the matter. He is evidently not very much pleased with the forceps, as a rule. Concerning the use of forceps, I can only speak from my personal experience in the matter, and I must confess that I am very much impressed in its favor, especially as I did the first of my operations with ligatures and had accidents in the way of hemorrhage which were simply terrible. Since I have used the broad-ligament forceps I have never had hemorrhage.

There are several little points concerning the technique of

the operation which the doctor has not adverted to, and which it seems to me could be spoken of with propriety; one is the management of the denudation of the cervix after encircling it with the incision for the purpose of crowding the tissues up. In operating, we draw the cervix down as far as we can; and if we are able to draw it down towards the vulvar orifice, we cannot tell exactly where to begin. If we begin too high, we may open the bladder the first thing. Two things are to be done in denuding the cervix: one is to avoid the bladder, the other is to avoid opening into the rectum. It is the easiest thing in the world to open into the bladder; we open it so quickly that the first we know of it there is a little gush of urine over everything. But by commencing the incision low down, and being sure that we get through not merely the vaginal mucous membrane, but the tissue under the mucous membrane, the connective vaginal tissue, we get close to the uterus itself and speedily bring ourselves in contact with the connecting material between the cervix and the bladder. The method of procedure I have adopted is to make this incision first, and then by pushing up posteriorly I separate and push up as far as I can from side to side till I open up the peritoneal cavity from behind, the finger slipping up easily where one can feel the smooth, glistening surface on the posterior wall of the uterus. Then, by tearing the tissues on both sides until we get on a level with the broad ligament, we can put two fingers into the peritoneal cavity. Broad ligaments differ; some are wide and some are narrow, just as there is a difference between the vaginal wall and the peritoneal cavity above. I have found the broad ligament five times as long in some women as in others. In hooking the finger over the broad ligament from behind and bringing it down forward, we can, with a good deal of effort, dip the finger into the anterior utero-vesical junction, and in that way push the finger forward and cut up on it with a knife until we make an opening through the vaginal vault in front of the uterus, and then it is an easy matter to separate and tear until we have as broad a cavity in front of the uterus as behind it.

Another thing the doctor failed to mention: some women will bleed at every point, and the amount of hemorrhage that will pour from them without opening an artery is astonishing, while in others there is very little bleeding. When the broad ligaments have been denuded in this way, I have experienced no trouble in including them in the bite of the forceps, never carrying the tip of the forceps beyond the top of the broad ligament, for if that projects beyond them the tip of the forceps becomes a place that can produce a puncture of the intestine after a while; but if we place it flush with the broad ligament, the broad ligament retracts and draws back, and the

forceps seems to go back to the pelvic wall, and there is a minimum of danger of perforation of the intestine. A simple thing can be done when the ligament is broad—that is, to reflex or anteflex the uterus; in that way we double the broad ligament and can catch the whole of it in the bite of the forceps, and when we do that we narrow very much the space to be grasped by the forceps. Sharp & Smith made a forceps a few years ago which seemed to me to be sensible. It consists of two parallel blades; the under blade curves out a little bit, the tips of the jaws meet when one closes the forceps, and when locked the two blades come down together, and in that way there is no danger of a portion of the broad ligament coming out. There is one practical point I noticed in three different cases after I had removed the uterus entirely, using the forceps, where I have had a hemorrhage. I recall describing to some gentlemen before whom I did the operation this particular form of hemorrhage, and telling them, when they had got everything in front of the broad ligament, to be particularly careful and lift everything from the posterior vaginal wall and take a sharp look for bleeding points. But in the case I refer to I worked three-quarters of an hour before I thought of looking at the posterior vaginal wall, where I found a large hemorrhage. I have had the misfortune to do everything in the way of badness in vaginal hysterectomy, except to cut off the ureter. In one case I opened the bladder in two different places, one of which I did not discover; in another case I opened the bladder once; and I opened the rectum in one case. These cases all got well, except the one in which one opening into the bladder was not discovered.

Objection is made to the forceps that sloughing of the broad ligament occurs which is liable to infect the peritoneal cavity. It seems to me there is no danger of that, for this reason: when the forceps is applied to the broad ligament the supposition is that the forceps presses up in the pelvic cavity, and that healing takes place below; whereas, in fact, healing takes place above, and that part is cut off from infecting the pelvic cavity, and when the forceps is removed the tissue that is necrosed from its grasp comes out of the hole left by the forceps. I have never had any trouble from such sloughing. To my mind there is an objection to using the ligatures, because they can introduce septic material. Another thing is, the removal is not always easy; in the cases in which I have used ligatures, I have had to make use of an elastic ligature strapped to the thigh in order to keep up pressure and get them out; in one instance it took five days.

I do not at all agree with Dr. Martin's third conclusion; I wish he would take it out. I don't think it is scientific when he says the mortality ought to be five per cent; I don't

think we can say what the mortality list ought to be. Operating upon cancer of the uterus is operating upon a most desperately fatal disease, and I think if only a small proportion of the patients recover or have their lives prolonged it is highly creditable and ought to be satisfactory. There are several points in the technique of the operation that could be brought up profitably, and one I wish especially to speak of is closing the wound afterwards. When the wound is closed, the patient put to bed, and the legs put down straight, it is the rarest thing I know of for anything to project into the vaginal cavity from above; the peritoneal lining of the pelvis which is involved in the wound will naturally fall down and appose itself to itself; the union is not postponed for twenty-four or forty-eight hours, but the healing process begins at once; in twenty-four hours there is a good deal, and in forty-eight hours quite a union has taken place there. I do not see the necessity of wounding the peritoneum still more by putting stitches in it. Anything in the way of drainage is facilitated by its remaining open in this way, and it will remain open only around the forceps; whereas if it is closed hermetically there is no possibility of anything getting away, but everything will remain there and be absorbed and may cause the patient's death. I have had seventeen cases and lost two of them. The first case, and the one I felt the worst about, was the one in which I opened into the rectum and two places in the bladder; that patient undoubtedly died from peritonitis caused by the undiscovered wound in the bladder. It is my custom, after finishing the operation, to put warm milk in the bladder, to see if it escape anywhere through the wound; if it do I know there is a hole, and I immediately search for it and sew it up.

DR. KARL SANDBERG.—I am very sorry that I did not have the pleasure of hearing the entire paper of Dr. Martin. My experience in this matter is limited. In reference to the question whether to use ligatures or forceps, I had the pleasure of seeing Dr. Martin, in Berlin, perform two hysterectomies by his usual method of applying ligatures wherever he was going to cut, and both of these patients had after-hemorrhage. One of them died, and the other came as near to it as possible without doing it. After this experience I was prejudiced in favor of forceps, and I am still. The forceps I used in my first case was Péan's, and that may be the one Dr. Etheridge referred to as being made by Sharp & Smith, of this city. The blades are grooved from one side to the other. After applying the forceps on both sides the uterus was removed, but soon after hemorrhage started from one of the broad ligaments, and it proved that the broad ligament had partly slipped out of the forceps. I applied one or two straight

forceps on the side of these, but it did not control the hemorrhage, and I finally had to pack with iodoform gauze. After this I had a pair of forceps made by Sharp & Smith in which the grooves do not run from one side to the other, but slantingly and across each other. This forceps grasps the broad ligament or anything else with a much firmer grasp than the one devised by Péan, as I demonstrate here by putting it on this towel and closing it. You will see that when you close Péan's instrument tightly over the doubled towel and make a traction on the towel to one side it slips right along the grooves. With the other pair of forceps, when you make traction you will tear the towel before it slips. Through using these forceps I have had no trouble with after-hemorrhage in any other case, and to my mind it is quite an improvement. The only indication I can see for using ligatures instead of forceps is that you could cut the ligatures short and leave them intraperitoneally, closing off the peritoneal cavity with the object of guarding against infections from the vagina. But if, as seems to have been suggested by the previous speakers, the ligatures are left long, to be removed afterwards by traction or some other means, then I can see no object in using them. Used that way I should consider them a well-paved pathway to infection.

DR. FRANKLIN H. MARTIN, in closing the discussion, said: I have very little to add. Dr. Etheridge attempts to criticise me somewhat because I did not go into the details of the operation which any ordinary surgeon would of necessity take for granted, such as ligating a bleeding branch of the vaginal artery in the posterior vaginal wall; or the method of separating the vagina from the uterus, which we all understand is to be at a point as far away from the disease as possible, and at the same time not take too much of the vagina. We all understand, before we begin to talk about this operation, that it is quite unpleasant to go into the bladder, and the thing to do is to keep as near the uterus as possible: and if you can't accomplish this by the finger nail, the point of blunt scissors kept against the uterus can easily separate any other tissue. Dr. Etheridge spoke of the forceps being objected to in some cases because they were allowed to project too far into the abdominal cavity; he stated that in his operations he placed the blades of the forceps so that the tips were flush with the broad ligament, and then brought them together. Any one who has had experience with this operation knows, with ordinary forceps, or even with those mentioned by Dr. Etheridge, that, in closing the instrument, if the ligament is flush you will squeeze the edge of it out of the forceps, and the chances are that the ovarian artery is left to bleed. The point he made as to the forceps coming together is a good

one, but even then if the point was carried a little further than the ligament it would be impossible to close it without having the point project into the peritoneal cavity. The only forceps I have seen which would obviate this is the one described by Eastman, of Indianapolis, who has operated successfully a number of times. His forceps is made so that the blades when closed cross at the point, and it is simply impossible, therefore, for the ligament to squeeze out at the end of the forceps. I do not wish to be understood as condemning *in toto* the use of the forceps, but I believe that the gentlemen who are using forceps now will gradually, as their experience increases, find that it is easier, safer, and more satisfactory to ligate the greater portion of the broad ligament; it is easier and safer if the ligatures are applied *properly*. If you leave spaces between your ligatures, of course you will get bleeding; if you ligate as if ligating a pedicle of an ovarian tumor, you will not get bleeding. It is a question of properly applying the ligature.

Dr. Etheridge did not like my statement that the mortality ought to be five per cent. I think the mortality ought to be even lower, and I believe it is already such in the hands of good operators.

The question of closing the peritoneum has been brought up. I stated that I thought the peritoneum should be closed, but of course that does not settle it. I believe the peritoneum should be closed if no indications arise for drainage, such as we have in cases of ovarian tumors or in abdominal surgery of any kind; in all other cases I think we should bring the peritoneum together so that it will unite, and then evert the broad ligaments as far as possible into the vagina, then drain the vagina with iodoform gauze.

Regular Meeting, April 17th, 1891.

The President, W. W. JAGGARD, in the Chair.

EXHIBITION OF SPECIMENS.

DR. HENRY T. BYFORD.—I have some very interesting specimens to present, viz.:

HEMATOMA, GYROMA, AND SO-CALLED ENDOTHELIOMA OF THE OVARY.

Dr. Mary Dixon Jones has made some very original investigations in this field, although I do not know that her pathology will be accepted unmodified. Here is a pair of ovaries, one containing a beautiful specimen of what had been a hema-

toma the size of a walnut; the cyst wall is one mass of zig-zag convolutions, the blood has been absorbed, and it now presents the characteristics of gyroma. There are other little bodies; here is one that is supposed to be an endothelioma. Here is a smaller one, which I removed from a patient a few years ago for symptoms but did not understand the pathological condition, in which there are also these hematomata. This is a kind of ovary that we can distinguish by examination before the operation. It feels almost like an adherent ovary, because it is large and heavy. Such ovaries occupy so much space at the bottom of the pelvis that one is apt to diagnose adhesions and exudate.

Here is another very fine specimen of a universally disorganized ovary; there are clots, but there were no bodies of any particular size. Some parts are myxomatous, others livid, and other parts fibrous.

The symptoms connected with these ovaries are characteristic. It is these conditions of the ovaries, I think, that give rise to more hysteria and mental disturbance than almost any other cause, unless perhaps a maleducated imagination. I have seen very bad cases of endometritis without any mental symptoms at all, although headache and backache might be quite pronounced. Many times sterility is the only symptom of the uterine inflammation, and the patients feel perfectly well. But in nearly all cases where there is one of these large ovaries with blood clots in it, and the accompanying inflammatory and degenerative changes, there is local pain; the patient cannot be on her feet very much, she becomes debilitated, despondent, loses will power, and, if placed in unfavorable surroundings, is afflicted with the worst forms of hysteria. The patient that had these greatly enlarged ovaries had been sick for from five to ten years; she had been unable to attend to her household duties, and lay around most of the time; had become thin and nervous, and exaggerated all her symptoms, complained excessively of her rectum—complained, in fact, of all her symptoms more than was natural—and nearly died when she found she had to have an operation. She has had the operation and got along without the least unfavorable symptom. Before that her nerves were in such a condition that she trembled all over when I came into the room.

In this last case mentioned, the ovaries were not so large as some shown, but were more disorganized and were filled with clots. The patient's symptoms were hysterical; there was a fixed pain in the left side and inability to stand. Whenever she was on her feet long, she felt bearing-down pains and had to sit down.

The other case, with only one ovary, on which I operated a number of years ago, was one of hysteria; the patient would

have frequent attacks and become unconscious and delirious. There was great localized pain, although she was naturally strong and not so debilitated. There was only one ovary that was affected to any extent.

When adhesions accompany these changes in the ovary, the patient is usually bed-ridden a good part of the time.

I want to show a specimen from a case of

EXTRA-UTERINE PREGNANCY

in which I operated two days ago. The patient, Mrs. G., menstruated three and a half months ago. I have the placenta, which is of quite a good size, with the fetus, membranes, and some blood clot. She menstruated the last of January, then went five or six weeks and menstruated again, and has menstruated almost continuously since that, with a varying amount of pain. She came to me toward the end of the second month, when I found a tumor, about the size of one of these large ovaries, lying behind and to the left of the uterus. I suspected the real condition and made her promise to call again in a few days. At the end of the ninth week I proposed an operation and sent her to Dr. Dudley for an opinion. He thought physical signs justified a laparotomy. The patient would not consent and was sent to Dr. Banga, who thought there should be an examination under ether first and then probably an operation. But the patient would not consent. About the middle of the third month the pain ceased; undoubtedly there was a rupture. I did not see her again until about the 25th of March, and then found the tumor still larger, and had counsel again from Dr. Banga; but the patient would not consent to an operation. In the meantime she was feeling better, but the bleeding continued, and about the 1st of April she passed the decidua with great pain, and after that felt quite well. I saw her the next day and found the tumor still larger, apparently about the size of an orange, and I gave the same opinion as before. Then she called in Dr. Fenger, who corroborated the diagnosis, and finally she consented to have an operation. I thought at the time of the operation the child was probably alive, for when I examined her the tumor was still larger, about the size of a small coconut; but I judge from the symptoms that the child must have died about the time the decidua was expelled.

The steps of the operation were very simple. Knowing what I was coming to, I took pains to pack the intestines away with sponges, and put a clamp on the broad ligament far enough down to get hold of the arteries; there was just room enough to get the fingers down and place the forceps; I then cut into the sac, striking the placenta, which you see is quite

thick and may have grown some after the death of the child. There was quite a little blood, considering the size of the incision, while I was cutting it, but I immediately separated the whole placenta. The loss of blood, except from the edges of the sac, did not amount to much after that. I then took off the clamps and ligated the upper edge of the broad ligament, wiped out the sac thoroughly and stuffed it with iodoform gauze, stitched it to the lower end of the wound, and closed it above. I put a drainage tube in the abdominal cavity for the first twenty-four hours, as there was a little oozing from the stitch holes in the sac. The patient passed gas to-day. (Recovery uneventful.)

DR. HENRY BANGA.—I wish to say that, as far as the diagnosis is concerned, Dr. Byford took it for extra-uterine pregnancy from the start. When I saw her the first time the tumor seemed to me somewhat small, and that is when I suggested that before I would pass an opinion as to the nature of the swelling I would propose anesthesia and a second examination. But when I saw her almost four weeks afterwards, it was evident that the tumor had grown meanwhile, and the decidua had passed, so that I also began to be convinced that it was as Dr. Byford had thought from the beginning.

DR. BYFORD.—I forgot to say that this is the second extra-uterine pregnancy in the same case. The first one she had five years ago; she had gone over her menstrual period, and supposed she was aborting. She bled and had pains for several weeks, when she passed the decidua, and had a hematoma in the right broad ligament which was very slow in absorbing, viz., over a year. This fact, together with her having all the symptoms of pregnancy, made me very certain of my diagnosis.

DR. JAGGARD.—Was this extra-uterine pregnancy on the same side?

DR. BYFORD.—No, on opposite sides; the first one was on the right side, and the next one on the left side. The right tube could not be felt at the operation, and the ovary was covered by membranous adhesions.

A COMPARATIVE STUDY OF ONE HUNDRED AND FIFTY-NINE CONSECUTIVE CASES OF PERITONEAL SECTION.

DR. HENRY T. BYFORD read a paper on a third series of peritoneal sections, with a comparative study of 159 consecutive cases. The series contained 52 completed operations and 2 incomplete, with a mortality of 9.23 per cent for the whole, but 5.77 per cent for the completed operations.

In the whole 159 cases there were 55 complete operations, with a mortality of 9.37 per cent. There were in all 46 vaginal sections, with one death, or 2.17 per cent.

There were 35 abdominal ovariectomies in the whole num-

ber; 10 of these were developed in the subperitoneal connective tissue, 9 were malignant, and 7 dermoid. Two of the malignant and 1 dermoid were developed in the subperitoneal tissue. Thus all but 10 were subperitoneal, malignant, or dermoid tumors, or had intraperitoneal adhesions. Most of the deaths occurred in this series, giving a mortality of 22 per cent. But for this series the mortality of all the other cases would have been but 7.05 per cent.

There were in all 66 cases of abdominal oöphorectomy, with 4 deaths. In the last series there were no deaths. Hysterorrhaphy was performed in 4 of them.

There were 15 completed abdominal hysterectomies, with 1 death. In the last 11 cases he employed his new method of treating the stump by vaginal fixation. His opinion is that the mortality of abdominal hysterectomies should be but little higher than that of abdominal ovariectomies.

He drained in over fifty per cent of his cases, and accounts for the frequency of drainage by the gravity of the cases. He always drained when much bloody effusion was to be expected. He attributes no deaths to the drainage tube, and considers it a safe procedure. He drains in all cases of vaginal hysterectomies. Small hernias occurred in three cases: one oöphorectomy, one ovariectomy, and one hysterectomy with abdominal fixation of the stump. In each case it occurred at the site of the drainage tube or stump.

He has used salines quite frequently, but has found them less satisfactory than he had been led to expect. In a few cases their effects seemed harmful. He believes that the less interference or treatment after the operation, the better for the patient.

	Operations.	Recovered.	Died.	Per cent Recovered.	Per cent Died.
Hysterectomy	10	9	1	90	10
Oöphorectomy.....	16	16	0	100	..
Ovariectomy	11	10	1	90.91	9.09
Myomotomy and oöphorectomy.....	1	1	0	100	..
Nephrectomy	1	1	0	100	..
Pelvic hematocele.....	1	1	0	100	..
Drainage of abscess.....	1	1	0	100	..
Exploratory incisions.....	2	1	1	50	50
Incomplete operations.....	2	0	2	..	100
<i>Vaginal Sections.</i>					
Hysterectomy	8	8	0	100	..
Ovariectomy.....	1	1	0	100	..
Total	54	49	5	90.75	9.25
Mortality for complete operations.....	52	49	3	94.23	.775

DR. BANGA.—I would like to ask the doctor how many cases he has had of oöphorectomy for fibroma, I mean Tait's operation, where he removed the ovaries in order to stop the growth of the fibroma, and whether his results have been satisfactory.

DR. BYFORD.—I have had about a dozen cases, but I have not heard from them since the operation.

DR. BANGA.—I have had only one case; I removed both ovaries, but it had no effect whatever on the growth nor on the hemorrhage.

DR. BAYARD HOLMES.—There was one point, on which Dr. Byford puts a good deal of stress, which it seems to me is not quite in accord with good surgical practice, and this is his remarks in regard to use of drainage. In the treatment of any wound, we have three indications which we ought to meet. The first is thorough sterilization, the second is absolute arrest of hemorrhage, and the third is coaptation. If we neglect to meet the first indication, our apology for not meeting that indication is drainage; we drain because we have not removed all infection, and under no other circumstances is there any possible excuse for drainage. I believe that under ordinary circumstances it is possible to render the peritoneal cavity practically sterile, even after removing a pyo-salpinx or infecting it with pus from a pelvic abscess. There is no excuse for not arresting the hemorrhage completely. The only indication which should be adequate to call for drainage in any ordinary operation would be the septic condition of the peritoneal cavity, and if it is in a septic condition the drainage must, of course, be more than transient—it must be virtually a drainage until that sepsis is all removed and all the infected and necrotic tissue is gone. It seems to me that can hardly be accomplished by the use of the glass drainage tube leading down into a blind sac. In the only case where this drainage was not adequate, there was a considerable collection of pus which a through-and-through drainage into the vagina would have probably carried away. So I believe that the remarks in regard to drainage are misleading, and under no circumstances should drainage be used where the two principal indications of womb treatment can be met.

DR. MARTIN.—I wish to ask one question of Dr. Byford, which is rather in the line of the remarks of Dr. Holmes, and that is, why drainage was found necessary in all cases of vaginal hysterectomy, any more than it was necessary in opening the abdomen in the other way. It is well known that the majority of European operators always close the peritoneal cavity in vaginal hysterectomy, and the greater number of them the entire wound, and do not drain.

DR. HENRY T. BYFORD, in closing the discussion, said:

In regard to Dr. Banga's remarks, I would state that in most cases I know of the menstrual flow did stop, but that was in small fibroids. In one case the patient nearly bled to death at the first period after the operation, and she used to nearly die every time before the operation. She had quite a good-sized tumor, perhaps as large as a cocoanut. The appendages were badly diseased. In regard to the matter of tying the ligature, I lost one case of ovariectomy and one of oöphorectomy from slipping of the ligature. I transfixed the ligature according to the manner which is given in the books, viz., to pierce it somewhere in the middle, and then tie on either side. In one case I did that, and in the other I pierced it in the middle and tied according to Tait's method. On one side is a Fallopian tube and on the other side the infundibulo-pelvic ligament, and, when we tie, the uterine horn and infundibulo-pelvic ligament are drawn together. When this is done there is great traction on both edges of the stump, and great liability of the side towards the pelvic wall to slip out; and just under that edge is an artery which will bleed. I have had two other suggestive cases. In one I allowed an assistant to tie while I sponged. When I came to close up I could not get the abdomen dry, so I opened up again and found that the ligature had slipped. In another case, before I got through the operation the whole thing slipped off, and I had a raw ridge of bleeding connective tissue, four inches long, extending from the side of the pelvis to the horn of the uterus. Since that I have adopted the plan of passing my needle through both the ovarian ligament and under the edge of the Fallopian tube, then through the infundibulo-pelvic ligament. Just on the ridge there is a fibrous band as large as a knitting needle, or a little larger. I stick it right under the edge between this and the artery, avoiding the latter. Then I tie one of my ligatures tight, which catches the two ligaments and the tube firmly together and has none of the broad ligament proper in it. The other I tie around the remaining membranous portion of the broad ligament, and then with one or the other of these threads I tie again after the ovary is cut off. After the ovary is cut off the parts adjust themselves better, and you can take in the tissues a little better.

With regard to the remarks about drainage, I confess I disagree with the gentlemen's remarks. In the way of argument they sound very well, but the fact is we cannot disinfect the peritoneal cavity absolutely every time. It does not do to take chances in abdominal surgery, for the patient is apt to take advantage of it and die. In the second place, you cannot get firm coaptation of surfaces within the pelvis. In the third place, you cannot always check hemorrhage com-

pletely; you may check it temporarily, and after the abdomen is closed it may commence again. I remember a prominent gynecologist here performing an operation on an easy case and closing up as any one would. The patient died, after three or four days, of septic inflammation. At the post-mortem he found nothing but a quantity of bloody serum. He had used all precautions, but it had been practically impossible to secure perfect asepsis. In the case I had, I enucleated a cyst in each broad ligament. I could not completely check the hemorrhage there, and I tamponed. On commencing to remove that tampon in a few days, I got a fecal odor. It had been impossible for me to tell that in the bottom of the pelvis this tumor had left a little rent in the rectum. Where the whole pelvis is one mass of bleeding tissues, very often you cannot check it, and I would not consider it safe to wash out with astringents. You cannot always get coaptation of surfaces so you can drain off the serum and then let the peritoneum take care of the rest. Another reason why we do not always try to secure perfect hemostasis is that we do not want to take the time and prolong the manipulations and exposure.

In regard to Dr. Martin's remarks about drainage in vaginal hysterectomy: In the first place, there is liability to sloughing of stumps. It is very difficult sometimes to close the abdominal cavity above the stumps so that there will be no oozing into it or infection from the edges of the stumps or ligatures. Another reason is the past success had by operators in these cases. There is a chance for something going wrong when you do not drain, but if you do drain it leaves little chance. You could operate in twenty cases and have nineteen get well, but every once in a while there will be infection of these stumps, a sinus in the connective tissue, pus accumulating, an abscess, and loss of the patient from general peritonitis, septicemia, pyemia, diarrhea, etc.

DR. T. J. WATKINS read a paper on

LACERATION OF THE ANTERIOR VAGINAL WALL, AND ITS REPAIR.¹

DR. HENRY T. BYFORD.—The operation as performed by Dr. Watkins is, I think, a remarkably useful one. It happens that the same shape of denudation was hit upon by myself and put into the last edition of Byford on "Diseases of Women," viz., a vaginal strip taken from each sulcus or each urethral notch, and carried back. At the same time I describe the method of catching in the fascia so as to draw up the edges and attach them, giving them fascial attachment.

¹ See original article, page 920.

In case it becomes necessary to shorten the anterior vaginal wall antero-posteriorly, a transverse strip can be denuded between these two. The method of putting in these sutures is also illustrated. I have no doubt Dr. Watkins' whole method is original, and there is one part that makes it more efficient, viz., extending the denudation straight back to the cervix. I have operated enough times to have had a good deal of trouble, and have had to give a good deal of thought to the subject of curing anterior colpocele and cystocele; and I know that, whatever procedure we adopt, the condition is apt to return. I have denuded a portion from either side where the sulci run into the little notch on either side of the urethra, and have carried the threads up behind the symphysis and out through the abdominal wall. That was all right; there was a good cicatricial contraction. But after a while the anterior wall comes down from further up, nearer the cervix, and the loose tissue commences to protrude below the place that I have fixed up so nicely. So it struck me that Dr. Watkins had hit the nail on the head when he went back and took all the lateral tissue off—didn't leave any to come out. We know that even in virgins the uterus will come down with the vagina, and I wonder whether, unless the doctor takes out a good wide strip from each posterior sulcus clear back, the uterus, not being firmly attached, will not push it all down again. We know the fascia about the cervix is quite loose when the cervix is down or well forward. The fascia that passes on either side of the cervix through the broad and sacro-uterine ligaments makes good points of attachment when it is firm, but when it is relaxed there is nothing to fix the vagina to at the other end. So I am anxious to know whether this is, in such cases, a permanent cure. I have often been rather discouraged and wondered what we could do. I have taken out a good deal of vagina in front and behind, and have often found after a few months as much tissue there as before, peeping out triumphantly.

DR. J. ALEXANDER LYONS.—I had the pleasure of assisting Dr. Watkins in the first few of his operations on the anterior vaginal wall, and the immediate result was so beautiful, and indeed, so far as we can at present find out, so permanent, I feel like saying it is the operation that should be adopted on nearly all occasions for the relief of the vesical symptoms he has enumerated.

I have made the denudations as he directs on three patients with good results; seven months have elapsed since my first operation, but in no case has there been a return of the vesical symptoms.

One of my cases was a patient on whom a friend of mine was doing trachelorrhaphy and perineorrhaphy. I noticed

there was also a marked prolapse of the anterior vaginal wall, and suggested the Watkins operation. The doctor kindly allowed me to perform it; primary union followed, and the vesical symptoms which the patient complained of before the operation were relieved, although the perineum did not unite. I suppose union failed in the perineum because of septic discharges lying there, which would not be so likely to disturb the anterior wall.

DR. F. H. MARTIN.—I would like to say a few words on this subject. I came here laboring under a slight delusion, as my impression, from the statement in the notice of the meeting, was that the operation was not only for laceration of the vagina, but for relaxation of the walls from any cause. The anterior vaginal wall is a hypotenuse of a right-angled triangle, the base of the triangle being represented by the pubes, the other side of the triangle by tissues from the superior margin of the pubes near the spine, or in the region of the insertion of the round ligament to a point near where the anterior vaginal wall joins the cervix. The side of the triangle formed by the anterior wall of the vagina is considerably longer than the other long side, and forms with the uterosacral ligaments a strong support spanning the entire pelvis. In case of pressure from above, long continued, the rectouterine ligaments stretch, and the upper angle or the apex of the triangle is lowered, thereby causing necessarily a sagging in the anterior vaginal wall. In those cases where there are no lacerations of the vagina, and in cases of cystocele where childbirth may never have taken place, or, in a word, in old hospital cases, occurring in scrubwomen, washwomen, etc., caused from pressure of the abdominal walls on this support across the pelvis, causing curvature in the anterior vaginal wall and the crowding of the bladder after it, operative interference is required as certainly as in those caused by lacerations. The anterior vaginal wall is made up of the vaginal layer of mucous membrane, which is thick and develops in case of pregnancy, and sometimes remains hypertrophied or in a state of subinvolution. Next to this we have the muscular coat, which is a continuation of the middle coat of the uterus, which of necessity becomes hypertrophied in cases of pregnancy, and which may remain in a state of subinvolution afterward, but which in its normal condition lies in folds, so that it throws the mucous membrane into transverse rugæ. The inner coat is composed of connective tissue, and is directly connected with the fascia of the pelvis, as stated by Dr. Watkins. Now, if we have a laceration of the anterior vaginal wall causing a cystocele, if we have subinvolution of the anterior vaginal wall, or if we have the condition of stretching that I have mentioned, in which we get hospital

prolapse, we should perform almost an identical operation. That operation should not have for its object the removal of tissue, because ordinarily we have no more tissue than the Lord put there. If hypertrophy has occurred, it is not necessary to remove the tissue, but by properly distributing it we can restore the parts to a proportionate condition of health, and involution will do the rest. I have been very much surprised this evening to find that Dr. Watkins has described, in many respects, an operation which I have performed for these three conditions for a number of years, but in which I think I have adopted one or two procedures of advantage which he has not mentioned. I have made a drawing, and here I present a model out of a glove to represent the method of operating. In the first place, I have recognized the fact that the deep tissue should be reached instead of the muscular and mucous coats alone. I have made an elliptical denudation of the mucous membrane, very narrow in the same location that Dr. Watkins has described; after making this denudation, I dissect under the edges of the undenuded tissues laterally, so as to be able to get a larger freshened surface than the narrow denuded surface would allow otherwise, and be able to reach the deep fascia on either side with my buried stitches. I seek, in my operation, to narrow the vagina laterally by narrowing the fascial coat, while I care for the superabundant muscular coat of the vagina by throwing it into its original condition of transverse folds. When this is accomplished by means of the peculiar insertions of the buried catgut, the edges of the mucous membrane are in apposition, ready to be sutured with simple superficial stitches. I accomplish the results described by a peculiar method of inserting the buried stitches. Each portion of catgut is inserted so as to have four points of traction, each point of insertion constituting one of these points; and when the quadruple stitch is tied it brings the four points in apposition. The upper two of the four insertions are deep and include the fasciæ; the lower two are more superficial, including the muscular coat alone.

DR. KARL SANDBERG.—I was very favorably impressed with the operation devised by Dr. Watkins, and certainly consider it a great improvement upon the earlier methods of performing colporrhaphy—the old method, I might say, of making denudation in the middle, and always of a certain form, and with the sutures tied together in the middle. Dr. Watkins has devised this operation with the idea of the fascia being lacerated along the sulcus of one or both sides, all the way from the uterus down to the urethra. There is a little doubt in my mind whether this operation could not be still further improved; it seems to me to be schematized a little too much.

I noticed in the list that out of twenty-three cases twenty-one were bilateral. I believe that by further experience this bilateral operation will be limited to fewer cases. I think that while the operator in the beginning may be afraid of overlooking any lacerations, and to be safe makes the operation extensive, the experienced eye or finger will be able to detect just where the laceration is and limit the operation to this point. It seems a little unreasonable that twenty-one of these twenty-three cases should have a laceration on both sides of the vagina extending all the way from the cervix uteri to the urethra. In regard to denudation, I should agree with Dr. Martin that it is absolutely unnecessary to remove any part of the mucous membrane; there is no superfluous mucous membrane; there is nothing to be removed. If we only make a vaginal incision and dissect up a little to each side, we will find the separated ends of the muscle, and we can bring them together and thus make the operation easier. It is reasonable to suppose that a small laceration of the cervix uteri may cause a subinvolution, or rather loss of contractile power of the whole organ; so also a subinvolution of the vagina or pelvic floor may be caused by a laceration of only a small part of the same. If this supposition is right, then in order to remedy the trouble it would be necessary only to find this place and bring the lacerated parts together. If we can only develop our diagnostic faculties so far that we can put our finger on the spot and say, There is where the laceration has occurred; this is the direction and that is the extension of the same—then, and only then, can we expect to perform a colporrhaphy intelligently, and until we reach this point we will be making extensive and multiple operations so as to be sure to take in every possible laceration or to remove redundant tissue that does not exist. There is undoubtedly in the matter of colporrhaphy a vast field for research yet, and while Dr. Watkins' operation is certainly a move in the right direction, I think there is still room for improvement.

DR. BANGA.—I would like to ask Dr. Watkins how long after the operation he had seen the patients when he marked them down as cured. I would also ask whether, in preventing prolapse of the anterior wall, he considers emptying of the bladder during parturition as apt to prevent it; and I would like to know whether he has the urine drawn after the patient is put back in bed; also whether he puts the patient in prone position or allows her to lie on the back.

DR. T. J. WATKINS, in closing the discussion, said: The greater frequency of cystocele among workingwomen is due entirely to their mode of life. After confinement they are unable to take the time of rest necessary for involution. The character of their work also tends to produce cystocele.

The more or less continued tension on the anterior vaginal wall excites a plastic exudate which bathes, softens the connective tissue, and permits it to stretch.

The amount of tissue which should be removed in operations upon the vaginal canal is important. In order to get deep and firm union it is necessary to either fold the tissues upon themselves or to bring them together by the method of flap-splitting. I do not see how this result can be obtained simply by sutures, as suggested by Drs. Martin and Sandberg.

The removal of the amount of mucous membrane suggested in this operation cannot be harmful, for the vaginal mucous membrane will stretch to almost any extent, as illustrated in complete prolapse of the uterus.

Dr. Martin evidently mistakes the object of the operation. The greatest objection to the median operation is that it shortens the anterior vaginal wall. This wall should be from two and a half to three inches in length, and the nearer we can keep the cervix to the sacrum the better will be the result.

In the cases which I have reported as cured, this term applies to the relief of symptoms and the removal of the mechanical indication for the operation.

I did not speak of the emptying of the bladder during labor, because it is a well-established obstetric aphorism.

During the last two years I have paid particular attention to the prevention of the engagement of the anterior vaginal wall between the head and the pubes, and have never experienced any difficulty in accomplishing this.

I have avoided the use of the catheter in these cases as far as possible, on account of the risk of cystitis.

I have hitherto paid little attention to the patient's position during convalescence; the position suggested by Dr. Banga would probably diminish the tension on some of the sutures.

The denudation about the urethra is similar to that recommended by Dr. Byford.

When cystocele occurs in a virgin it is due to the constant tension and the plastic exudation as described above. Of course the causes for the constant tension are various and often hard to determine. When the anterior vaginal wall is restored it is most essential to restore the proper direction of the canal, because it partially relieves the anterior vaginal wall from the weight of the uterus—that is, when the vaginal canal has its normal direction, intra-abdominal pressure is lateral; when the posterior vaginal wall is torn, intra-abdominal pressure is largely in the direction of the canal.

Dr. Sandberg made a slight mistake as to the location of the laceration. Two cases of unilateral laceration were reported.

TRANSACTIONS OF THE OBSTETRICAL SOCIETY OF LONDON.

Wednesday, April 1st, 1891.

J. WATT BLACK, M.D., *President, in the Chair.*

Specimens.—MR. TARGETT: Section of Vertebrae and Sacrum from a case of Spondylolisthesis. MR. ALBAN DORAN: The Uterine Appendages in a case of Double Hemato-Salpinx. DR. WHEATON (for Dr. W. Duncan): Early Malignant Disease of the Uterus.

A CASE OF EXTRA-UTERINE PREGNANCY AT FULL TERM; REMOVAL OF CHILD AND PLACENTA BY ABDOMINAL SECTION; RECOVERY.

DR. JOHN W. TAYLOR (Birmingham) read a paper on this subject. An account is given of the operation of abdominal section for removal of the child; of the interval between this and the second operation; of the operation for removal of the placenta on the twelfth day; and of the subsequent history of the case until the recovery and discharge of the patient. The author concludes with a short commentary on the case, to which is added Dr. Lycett's description of the child.

A CASE OF EXTRA-UTERINE GESTATION, THE SAC BEING SITUATED IN THE RIGHT BROAD LIGAMENT, PREGNANCY ADVANCED TO THE EARLY PART OF THE FOURTH MONTH.

DR. WALTER GRIFFITH read a paper on this subject. The patient, who was under the care of Dr. Rout, of Hornsey, was 32. She had been married eleven years; never pregnant before. Previous health good. Severe sickness began in the second month and was followed by severe attacks of abdominal pain and faintness. Dr. Griffith, with Dr. Rout, made out the diagnosis of extra uterine gestation in the right broad ligament. The abdomen was opened, and the sac, which had ruptured, was opened and emptied, profuse hemorrhage taking place immediately from the placental site. The bleeding was arrested with difficulty. It was impossible to remove the sac, and after the abdomen had been imperfectly irrigated it was closed and the sac left plugged. Death occurred an hour after. The specimen removed was described in detail.

Reference was made to the anatomy of the placental site, the peculiar position of the right ovary beneath the sac, and to existing disease of the left oviduct; also to analogous cases of ovarian cysts invading the broad ligaments, and to the cases of Werth and Hart.

A CASE OF OBSTRUCTED LABOR, IN WHICH A LARGE FIBROMA OF THE OVARY OCCUPYING THE PELVIS WAS MISTAKEN FOR THE HEAD OF AN EXTRA-UTERINE FETUS.

DR. WALTER GRIFFITH read a paper on this subject. The patient was admitted into the Great Northern Hospital in labor, the tumor having been recognized and diagnosed as the head of an extra-uterine fetus. Three methods of delivery were discussed: (1) Cesarean section; (2) vaginal section; (3) craniotomy. Craniotomy was finally chosen, as it appeared to involve least risk to the mother. Great difficulty was met with in extracting after craniotomy until version was performed. Septic symptoms gradually supervened, and the patient died on the eighth day. The characters of the uterus and placental site were described, and the author stated his opinion that in all such cases of great obstruction abdominal section provided the safest course of treatment.

A CASE OF EXTRA-UTERINE GESTATION ASSOCIATED WITH SLOUGHING OF THE ABDOMINAL WALL AND ATTEMPTED EXTRUSION OF A MATURED AND PUTRID FETUS NEAR THE UMBILICUS.

MR. MARMADUKE SHIELD read a paper on this subject. The patient was a young married woman. For several weeks she had been ill with fever, and for several months had had a large abdominal tumor. The uterus was explored and found to be empty. She was a primipara. There was a considerable circular opening with sloughy margins in the situation of the umbilicus. Through this protruded a tumor the size of a turnip. It was black, offensive, and pultaceous. Under chloroform the opening was enlarged downward, and a fetus extracted along with foul fluid and gas followed by bright blood. The placenta was attached deeply behind and above, and the sac appeared to be extraperitoneal. The bleeding was stopped by hot-water irrigation. The placenta was removed piecemeal, further hemorrhage being prevented by irrigation followed by packing with sponges. The author then discussed the pathology and anatomy of the case, together with questions of the diagnosis and treatment of ectopic gestation.

DR. CHAMPNEYS asked Mr. Taylor as to the results of auscultation of the placenta. His own case had been wrongly criticised without proper account being taken of the long

interval of practically normal temperature, which entirely negated the idea of absorption through the wound. The absorption was through the placenta. He thought the cases of Mr. Taylor and Mr. Jessop and his own case might have been tubal or tubo-ovarian. He also called attention to the great inferiority of these fetuses, and said the mother's life ought not to be endangered in any way for their sake.

MR. ALBAN DORAN doubted whether the operation of craniotomy had done much more harm in Dr. Griffith's case. He had seen the case with Dr. Griffith and had advised him to do a craniotomy. He related a case of extra-uterine gestation mistaken for an ovarian cyst.

DR. HERMAN thought the cases in which the fetus lay in the peritoneal cavity were explained by tearing of the amnion from the movements of the child. Probably if the vernix caseosa were examined, bits of amnion would be found in it.

DR. GRIFFITH, in reply, thought abdominal section preferable to craniotomy in cases like the one narrated.

Wednesday, May 6th, 1891.

J. WATT BLACK, M.D., *President, in the Chair.*

Specimens.—DR. WM. DUNCAN: (1) Extirpation of the Uterus for Cancer; (2) Broad-Ligament Cyst. DR. GRIFFITH: Double Hydro salpinx.

TETANY IN PREGNANCY.

DR. DAKIN read a paper on this subject. He gave a brief description of tetany, or tetanilla, and then described a case at length. This case, in addition to the fact that it was an instance of a very rare disorder of pregnancy, had the peculiarity that the spasms never completely relaxed during the three days of the disease. The contractions were accompanied by, and were probably due to, very severe vomiting, and the two diseases combined led to a fatal issue, in which the tetany dealt the final blow by involving the muscles of respiration.

The author then, from the few recorded instances of the disease during pregnancy, constructed a typical case, with which he compared the case detailed in the paper.

The differential diagnosis between this disease and other spasmodic affections which might be confounded with it (tetanus, hysteria, spinal meningitis, uremia, one form of epilepsy, and ergotism) was discussed, the treatment briefly referred to, and general conclusions drawn. A table of all accessible recorded cases was appended, and references given

to authors who have treated the subject of tetany, generally and in special aspects.

DEATH FOLLOWING INJECTION OF ACID NITRATE OF MERCURY.

DR. JOHN PHILLIPS read a paper on this subject. The patient was a married nullipara æt. 25 when first under observation, her complaint being sterility and dysmenorrhea. Three years later, while separated from her husband, she became pregnant, and, with the object of ridding herself of the nine or ten weeks' conception, about a tablespoonful of acid nitrate of mercury was injected into the vagina. The same evening vomiting set in and intense pain, for which morphine and cocaine were given. The face was pinched and of a markedly abdominal type. Temperature 102° F., and the pulse 112, wiry but regular. The stools became frequent and blood-stained. The urine was scanty and was passed involuntarily. The vagina was in a sloughy condition. A vaginal douche brought away some blood-stained flakes. The uterus was enlarged and the os soft and patent. Carbonate of ammonia was administered, but she sank and died. A post-mortem examination was made by Mr. Pepper. The bladder contained bloody urine, the blood evidently derived from the kidneys. The folds of the vaginal mucous membrane were covered by a hardened slough. The cervix was untouched, but there was some slight detachment of the decidua membrane. The uterus contained a ten weeks' fetus with its membranes intact. The mucous membrane of the whole of the large intestine and the lower part of the small intestine was blackened and in a state of superficial slough. Peritonitis had commenced. The mucous membrane of the stomach was healthy. Dr. Phillips remarked that the peritonitis was due probably to absorption from the sloughy mucous membrane of the vagina. He pointed out that there was no fetor of breath, no sponginess of gums, and no enlargement of the cervical glands.

DR. BOXALL thought it hardly fair to say in the present case that no wound existed, as an eschar was produced. In mercurialism from vaginal douches the symptoms were generally abdominal pain, diarrhea, and tenesmus, and only rarely salivation or spongy gums.

SEQUEL TO A CASE OF SEROUS PERIMETRITIS.

MR. ALBAN DORAN read a paper on this subject. The first paper on this case was published in the twenty-first volume of the Obstetrical Transactions. The patient died in August, 1890, about three years after the exploratory incision. The girl grew tall, but became ill and weak and ema-

ciated. Dr. Glott, of Bromley, watched the case to its termination. She showed tubercular disease of chest as well as abdomen, pyrexia, cough, sweats. Hectic tubercle was found in the abdomen and chest. Both ovaries were much enlarged and converted into cysts filled with dirty yellow, pul-taceous material. The Fallopian tubes were swollen into two oval fluctuating cysts.

Mr. Targett had examined the specimens microscopically and could find no bacilli. He thought the condition was due to chronic inflammatory disease of gonorrheal origin. The girl, although unmarried, admitted coitus, and so there was a possibility of gonorrhea. She never menstruated again after the operation. If she had had gonorrhea it is possible that the parts were thereby prepared for the easy invasion of tubercle. The probability of primary tubercular disease of the tubes is far greater. There was a family history of tubercle. Reference was made to the writings of Pozzi, Kaltenbach, and others. In all probability the disease began as tubercular salpingitis, which set up tubercular peritonitis. This was relieved by the abdominal incision. The patient finally succumbed to pulmonary phthisis. The dull yellow, spongy tissue cut into at the operation was not found at the necropsy.

DR. HORROCKS remarked that the case was of great interest, as it had been so well and so patiently followed to its termination. He did not think that when bacilli were not found in a specimen one could say that the case was not tuberculous.

DR. GRIFFITH referred to cases recorded by Bernutz and Goupil, in which pelvic inflammation was apparently connected with tubercular disease, and remarked on the apparent infrequency of this connection in England.

Wednesday, June 3d, 1891.

J. WATT BLACK, M.D., *President, in the Chair.*

Specimens.—DR. W. H. KELSON: Acardiac and Acephalous Monster. DR. LEWERS: Polypoid Endometritis with Blighted Ovum. MR. ALBAN DORAN: Water Color Drawings of (1) Case of Congenital Auricular Sinus; absence of external meatus on opposite side; cutaneous sinus over sacrum; (2) Cervical Auricle. DR. PETER HORROCKS: (1) Multilocular Ovarian Cyst, and Fibroma of the opposite Ovary; (2) Brain showing Thromboses in Cerebral Veins and Hemorrhage into Internal Capsule in a case of Ingravescient Hemiplegia during Pregnancy and Parturition.

DR. HERBERT R. SPENCER read a paper on

VISCERAL HEMORRHAGES IN STILLBORN CHILDREN; AN
ANALYSIS OF ONE HUNDRED AND THIRTY AUTOPSIES:
BEING A CONTRIBUTION TO THE STUDY OF THE
CAUSATION OF STILLBIRTH.

The paper gives a detailed account of a consecutive series of one hundred and thirty autopsies on fresh, mostly stillborn, fetuses, in so far as congestion of, and hemorrhage into, the viscera are concerned. Appended are tables of the more important organs affected.

The main part of the paper consists of a description of the naked-eye and microscopic appearances of the various viscera as regards congestion and hemorrhage.

The causation of the hemorrhage is discussed, and the following practical conclusions are drawn:

1. In children stillborn, or dying shortly after birth, congestion or edema, and hemorrhages, are usually found in various important viscera.

2. These hemorrhages occur in cases delivered naturally or by version or by forceps; through normal and abnormal pelvis; in primiparæ and multiparæ; with large and small children; in "easy" and difficult, rapid and prolonged labors.

3. The hemorrhages are, however, most frequent and most severe in children subjected to much pressure by the parturient canal, or instruments, or the hand of the attendant, especially when delivered by the lower extremity.

4. Cerebral hemorrhage is more frequently found in stillborn children delivered by the forceps than in those born by the breech, and in these latter more frequently than in those born naturally by the head.

5. Hemorrhage into most of the other viscera is more frequently met with in pelvic than in cephalic presentations.

6. These hemorrhages and the accompanying injuries are in many cases the cause of the stillbirth, and, when not immediately fatal, may be followed by the gravest consequences.

7. They are most likely to be avoided by preventing premature rupture of the membranes, by artificial dilatation of the parturient canal (when necessary), by restricting the employment of version and other artificial manipulations to urgent cases, and by preferring cephalic to podalic version in cases suitable for the former.

8. The use of the forceps should be absolutely limited to cases in which there exists some pressing danger to mother or child, and it should never be employed merely to shorten the time of labor.

9. In breech presentations, examination of the genital

organs of the child should be carefully avoided during delivery. As soon as the child's limbs are born they should be wrapped in a thick layer of antiseptic wool (which keeps the child warm, and prevents the hand from slipping, and protects the limb from pressure). If traction be necessary, it should be made over wool wrapped around the child's limbs or pelvis; it should never be made by the hand around the child's waist.

10. In delivering the after-coming head, care should be taken that the sterno-mastoid muscles are not unduly stretched or pressed upon. When the after-coming head is in the pelvis, where there is even slight difficulty, resort should be had to the forceps to deliver.

DR. HERMAN said it was impossible to controvert Dr. Spencer's carefully observed and recorded facts, but he could not agree that the forceps should never be used to shorten labor. In cases in which there was no pelvic deformity, nor disproportion between the child's head and the pelvis, the os uteri was fully dilated, and delivery was slow simply because the pains were too weak to quickly overcome the resistance of the pelvic floor, he thought the use of forceps to shorten labor would be good practice. He thought accoucheurs all over the country used the forceps for this condition more frequently than for any other, and that they did not find harm resulting to the child. He agreed in recommending the forceps for the delivery of the after-coming head. That injuries to the brain were more common in forceps-delivered children than in those born naturally, was due, he thought, to the fact that the forceps was used in the worst cases, and so the conditions which rendered forceps necessary had produced the injuries.

DR. PETER HORROCKS related three cases in which, after podalic version and delivery by traction, the children had made no attempt at respiration, although the heart was beating. In one of these an attempt was made to catheterize the trachea, but the catheter passed down the esophagus and the stomach was filled with air; so tracheotomy was performed, and the child's heart was kept beating for an hour and a half. No effort at respiration, however, was made, and a post-mortem examination showed hemorrhage into the fourth ventricle of the brain. In the other two cases there was also hemorrhage into the fourth ventricle, and, in one, on the surface of the brain also. He had considered the total absence of all efforts at respiration to be due to pressure on, or damage to, the respiratory centre in the medulla oblongata or bulb. He asked what was meant by edema of the cord.

DR. DAKIN thought that many children who survived suffered from visceral hemorrhages; some of them—as, for

instance, into the muscles and cellular tissue—perhaps not materially affected the child's welfare. He asked if these extravasations were, as thought by some, a cause of the milder cases of jaundice, by the absorption of their blood pigment into the general circulation and consequent staining of the tissues. He noticed that out of twelve or thirteen cases which survived over three days, only two were jaundiced. He thought the intestinal and uterine hemorrhages would explain many of those cases in which bleeding took place from the rectum in male and from the vagina in female children.

MR. ALBAN DORAN thought that many children were born with visceral hemorrhages which did not kill but which set up diseases. Large subcutaneous extravasations of blood caused by violent blows were sometimes followed by the development of a sarcoma. He related one or two instances.

DR. LEWERS suggested that some morbid condition of the vessels might have caused the hemorrhage in some of the cases. Considering the fact that so many children that afterwards thrived had been delivered by forceps, he thought it seemed improbable that the forceps, skilfully used, would often cause visceral hemorrhage in healthy fetuses.

DR. JOHN PHILLIPS alluded to parturition in hemophilic women. He had never met with a case. He related two cases of visceral hemorrhage in newly-born children, one a breech case with hemorrhage into the liver, the other a normal labor with hemorrhage from the stomach. He agreed that many so-called "asphyxia deaths" were really due to internal hemorrhage.

DR. HERBERT SPENCER, in reply, thought that the question of the use of forceps could not be decided by an appeal to practice nor by statistics of stillbirths. He thought that many slight muscular or mental disabilities in after-life might have their origin in these injuries. Careful observations of the after-histories of difficult forceps deliveries were very desirable. He thought many of the cases of head injury which he had recorded were clearly due to the forceps, and not to the conditions which had led to their use. He recommended the use of the forceps to the after-coming head when it was in the pelvis and there was difficulty in extraction. He thought hemorrhage into the sterno-mastoid muscles was frequently overlooked. He had seen cases similar to those described by Dr. Horrocks, and had found hemorrhages in the medulla, but not in the respiratory centre. He did not approve of tracheotomy in Dr. Horrocks' case. He recommended catheterization of the trachea, which he had often performed. He thought, with Zweifel, that the majority of jaundice cases were due to extravasated blood with subsequent changes and absorption.

Wednesday, July 1st, 1891.

J. WATT BLACK, M.D., *President, in the Chair.*

Specimens.—DR. LEWERS: microscopical sections of (1) Case of Squamous Epithelioma removed three years ago, no recurrence; (2) Case of Columnar Epithelioma removed nearly two years ago, no recurrence. DR. HERBERT PAGE (Redditch): A Mylocephalous Acardiac Twin.

DR. ERNEST HERMAN read a paper on

FIVE MORE CASES OF PUERPERAL ECLAMPSIA, ESPECIALLY ILLUSTRATING THE TEMPERATURE AND URINE IN THIS DISEASE.

Five cases are detailed, of which the chief features are as follows:

CASE I.—Fits and premature delivery in first pregnancy; symptoms three weeks, and injury producing unconsciousness three days, before end of third pregnancy; spontaneous premature delivery of living child; fits beginning an hour after delivery; five fits; urine albuminous after first fits; nearly solid with albumin after last; diminished percentage of urea during fits, and probable diminution of the quantity of urine; rapid decrease of albuminuria and increase of urea percentage after cessation of fits, and, later on, slight diuresis; persistence of slight albuminuria for a month after delivery; subsequent cessation of albuminuria.

CASE II.—First pregnancy; premonitory symptoms a week before fits; fits coming on in middle of eighth month of pregnancy; spontaneous premature labor; twins, both living; eleven fits in all, the last three-quarters of an hour after delivery; no retinal changes; sudden dyspnea after last fit; steadily increasing dyspnea, and death by asthenia forty-seven hours after delivery. Irregular pyrexia throughout; diminution in quantity of urine and urea during fits; increase of albuminuria and further diminution of urea percentage during the six hours following delivery; then decrease of albuminuria and increase of urea percentage.

CASE III.—Ninth pregnancy; premonitory symptoms three weeks, fits beginning fourteen hours, before delivery; eight fits in nine hours; slight pyrexia; cessation of fits and fall of temperature after morphia and before delivery; intra-uterine death of child and premature delivery; urine solid with serum-albumin; diminution of albuminuria following delivery; after delivery continuous rise of temperature, and death by coma ten hours after delivery. Diminished quantity of urine throughout; steadily increasing diminution of percentage of urea throughout.

CASE IV.—Second pregnancy ; premonitory symptoms two days before fits ; fits coming on about end of seventh month ; spontaneous premature delivery of living child three days after commencement of fits, and four hours after last fit ; fits almost continuous for ten hours before admission, ceasing after morphia and chloroform ; no retinitis ; slight pyrexia before delivery ; steadily increasing dyspnea and rising temperature, ending in death fifty-two hours after delivery. Urine solid with albumin before delivery ; some diminution in albuminuria after delivery ; no diminution of urea percentage ; diminished quantity of urine and urea before delivery, rising, but not to normal amount, after delivery ; acute degenerative changes in renal cortices, pulmonary and cerebral hemorrhages.

CASE V.—Third pregnancy ; fits beginning in first stage of labor ; forceps delivery ; child living ; six fits before delivery, within a period of three and a quarter hours, the last half an hour before delivery ; then four and a half hours without fits ; then five more fits within period of nine and a half hours ; no retinitis ; great and sudden fluctuations of temperature, not showing any relation to fits ; urine before delivery solid with albumin (very little paraglobulin) ; diminution of albumin after delivery ; more rapid diminution after cessation of fits ; no casts ; slightly diminished quantity of urine and percentage of urea during second set of fits ; slight diuresis and increased urea excretion during lying-in ; deficient memory for at least a week after fits ; recovery.

The author recapitulates the following facts, seen on comparing these cases with one another, and with those published by him in vols. xxix. and xxxii. of the Transactions, in all twelve cases :

1. Four children out of ten died in utero.
2. The cases show no direct effect of the fits on the temperature.
3. In all cases observed at the beginning of the disease, except two, the quantity of urine was lessened. Of the two exceptions, one died, and in the other renal disease persisted after childbed.
4. In all, the excretion of nitrogenous matter in the urine was absolutely diminished, and in most the percentage was diminished.
5. In all, the urine was at one time nearly or quite solid with albumin. In three of the cases the fits appeared to increase the amount of albumin. The two cases in which the albuminous precipitate contained the largest proportion of paraglobulin both recovered. Of three in which the amount of paraglobulin was less than in the rest, two died, and in one renal disease persisted.

6. In all that recovered there was rapid increase in the amount of urine and the quantity of nitrogenous matter contained in it, and diminution in the amount of albumin. This restoration did not, as a rule, take place till some hours after the cessation of the fits, and went on more rapidly after delivery in the cases in which cessation of fits preceded delivery. This restoration of renal function did not take place in the cases which died.

7. Retinitis was only present in two cases, both of which died.

DR. PETER HORROCKS alluded to the fact that in non-puerperal eclampsia the prognosis was grave if the temperature was high; also that sometimes the temperature would rise considerably for some hours after death. He asked if the same were true in puerperal eclampsia. He also asked whether the casts in the urine were epithelial, as in tubal nephritis.

DR. HERMAN, in reply, said the kind of casts seen in his cases was stated in the notes of each case. So far as he remembered, they were always hyaline or granular, not epithelial. His cases showed that the mode of death observed in some cases, with the temperature rising up to the time of death, was not the invariable one. The temperature had not been taken after death in any of his cases.

DR. RUTHERFORD read a paper on

CYSTS OF THE VAGINA: THEIR ETIOLOGY, PATHOLOGY, AND
TREATMENT.

In this communication only cysts with liquid contents are referred to; air cysts are purposely omitted.

Cysts of the vagina are classified as submucous, interstitial, and circumvaginal, though the author prefers the classification of superficial and deep, as it expresses their situation more accurately from a clinical point of view.

Reference is made to the number of cysts generally found in each case, and their site, shape, size, and rate of growth are all discussed.

They are most frequently found in married women of middle age, but practically no period of life can be said to be exempt from them.

The epithelium lining the interior of the cyst is most usually of the low cylindrical kind, but other varieties have been described.

The question of vaginal glands is touched upon, and the opinions of different observers are quoted to show that in all probability there is an absence of glands in the vagina. The author figures a vaginal crypt as the nearest approach to a

vaginal gland which has ever been observed by him. From these crypts it is possible cysts may occasionally arise under pathological conditions. The origin of cysts from connective-tissue spaces, either as serous or blood effusions, is discussed; their derivation from dilated lymph channels, remnants of Müllerian ducts, Gärtner's canals, and urethral glands are all reviewed as shortly as possible; and, finally, the symptoms they give rise to and the methods of treating them are given.

The conclusions reached by the author are that cysts of the vagina are derived from various sources, and may be divided into two classes:

1. *Accidental*.—Cysts in this class originate (*a*) in crypts of the vagina in a few instances, by occlusion of their orifices and subsequent dilatation; (*b*) as effusions of serous fluid or blood into the connective tissue; (*c*) in dilated lymph channels; (*d*) in glands of the urethra; (*e*) in hydatid cysts—this variety ought not to be included amongst vaginal cysts.

2. *Congenital*.—(*a*) From persistent remains of Gärtner's canals; (*b*) from persistent remains of Müllerian ducts.

Four microscopical drawings are included to aid in the description of certain points, and also a list giving the literature of the subject.

Two circumstances have induced the author to bring the subject of cysts of the vagina before the notice of this Society. In the first place, on looking through the Obstetrical Transactions reports of isolated cases are to be found, but nothing attempting their etiology, pathology, and treatment; and, secondly, because he has had an opportunity of observing fourteen cases during the past four years, most of which were operated on and their walls subjected to microscopical examination, either by himself or by Mr. E. Solly, late Surgical Registrar at St. Thomas' Hospital.

Besides these cases he has collected others from medical literature since 1887, which, together with fourteen under his own observation, make a total of over fifty cases, and upon an examination of this series the present communication is based.

TRANSACTIONS OF THE GERMAN GYNECOLOGICAL ASSOCIATION.¹

Fourth Meeting, held at Bonn, May 21st to 23d, 1891.

VEIT (Bonn) opened the meeting with words of welcome to the members in attendance, and followed with a paper on

¹ Translated from the *Centralblatt für Gynäkologie*.

MENSTRUATION, OVULATION, AND CONCEPTION.

He maintained that Leopold's findings fully proved the correctness of Bischoff's doctrine, for the following reasons: 1. A corpus luteum corresponding to the last, or last but one, preceding menstruation, was found as frequently as appears possible in the nature of the cases. 2. The nine follicular ruptures met with in the intermenstrual period can be explained by no other assumption so well as by ascribing them to the pressure exerted during the examination preceding the operation. In like manner he thought the deductions which had been drawn from the comparison of the termination of conception with the time of the last menstruation, from His' findings in young embryos, etc., to be erroneous. Loewenthal's statistics prove, since even under such exceptional conditions more than two-thirds of all conceptions occur within the first twelve days, that the same rule applies to woman as to animals; in other words, that culture in the main has left everything unchanged. Moreover, where fruitful coition has taken place late in the intermenstrual period, the first month of pregnancy can be lacking only in the minority of cases, because the ovum generally does not emerge before the beginning of the catamenial hemorrhage, and because after such intercourse menstruation usually is not stopped entirely, but is merely shortened in duration.

Finally, Veit leaves it an open question as to how great is the practical importance of the attempts to make comparisons between the duration of the menstrual period and that of pregnancy, but he thinks it is absolutely certain that an uncommonly long duration of menstruation corresponds with a protracted course of pregnancy.

DOHRN (Königsberg) read a paper on

PRACTICAL OBSTETRICS AMONG PRIVATE PATIENTS.

It is a well-known fact that the introduction of antiseptics into obstetrical practice has not everywhere been followed by the results upon the health of the patients which might have been expected from it. While it has been demonstrated that in some larger districts of Germany the puerperal mortality has diminished of late years, still there are other districts in which such a decrease is not perceptible, and even where a diminution in puerperal mortality can be shown it has not reached nearly its attainable degree; on the contrary, the results of some maternities prove that more might have been secured.

Under these circumstances it seems necessary to trace the course by which better results may be expected.

The present paper is restricted to two points:

1. It shows to what degree the puerperal mortality has been diminished in recent years in several German states.

2. And discusses to what extent the practical obstetrician can be made responsible for the conditions hitherto existing.

Large statistics of the puerperal mortality are available from several German states. They are not all equally reliable, and where unsatisfactory individual reports are often encountered special questions will have to remain unanswered. With such a foundation we can at best make only a general summary which, being based on large numbers, furnishes a synopsis of the main results for the several years.

This remark applies particularly to the largest German state, Prussia. The deaths in that country during the puerperium have been collated by Boehr and Ehlers, whose statements are useful in so far as a comparison of the total numbers for the several years may be made from them on the basis of large figures. Errors undoubtedly occur in the figures of every single year, but we may be justified in assuming that the fraction represented by them does not differ materially from year to year.

Graphic delineations of the mortality of lying-in women in Prussia from 1816 to 1880, of the puerperal mortality in Berlin from 1878 to 1887, and in Hamburg from 1873 to 1879, and of the mortality in German maternities from 1877 to 1885, give results that on the whole are satisfactory, and we may positively conclude from them that in several large regions of Germany the mortality of puerperal women has diminished of late years.

But this good result is not recognizable in all regions from which large statistics are available. One curve of the puerperal mortality in the kingdom of Saxony during the years 1883 to 1889 shows, for instance, that the diminished mortality there did not occur until after a considerable rise in the year 1884, and that in the last two years of the report the mortality again increased. Above all, the mortality curve for the Grand Duchy of Baden from 1873 to 1887, made from figures furnished by Hegar, does not show any progressive decrease in the numbers.

Accordingly we may assume as proved that the blessing of antisepsis has not been followed in Germany by all the attainable results, and this leads to the question to what extent the practitioner may improve the existing conditions.

In the first place, improvement of the professional midwives must be aimed at. Ninety-five per cent of all labors are in the hands of midwives alone, and on the way in which they perform their functions puerperal mortality depends first of all. On the other hand, the influence exerted by the prac-

tioner must not be underestimated. This influence becomes important not only by reacting on the activity of the midwives, but it also has a direct influence on the height of the mortality by the manner of his interference. To be sure, the fraction of the labors to which the physician is called is small compared with the total number of all deliveries; still observation shows that a material proportion of the rate of mortality depends precisely on the mode of treatment which these relatively few cases obtain from the physician.

In all civilized countries from which larger statistics are available the fact has become manifest in the last decades that the number of operative deliveries is rising. This is due in part to external conditions, but mainly to the increasing facility of intercommunication; in part, however, it is to be ascribed to the growing confidence in the results of the operative manipulations. Since the introduction of antiseptics operative deliveries seem to have multiplied rapidly. Hegar has furnished a table for Baden illustrating this fact, and the curve drawn according to these statements makes an instructive picture.

The question arises, Is this justified; is the puerpera actually benefited thereby? The answer must be decidedly in the negative.

Several years ago D. had already collated larger statistics of the operative interferences of obstetricians in the electorate of Hessen, which forced him to the deduction that with the increase of operative deliveries neither the mother nor the child had been benefited. The result has not changed in more recent years. The enormous increase in operative deliveries in the Grand Duchy of Baden has not diminished the mortality of puerperæ there; and as for the kingdom of Saxony, he is even able to prove that among the deceased puerperæ from 1883 to 1889 the number of those delivered by operation has increased largely, that is to say, that operative deliveries there had to be charged from year to year with a larger proportion of puerperal deaths.

Hence it is clear that the confidence with which nowadays many practical obstetricians approach an operative delivery is not justified by the actual results. In reality the results of antiseptics have not yet reached the point to lead one to terminate a labor artificially with a light heart. The individual may perhaps risk it, but the general body needs to be cautioned.

The interest of the puerpera in the majority of cases is best served if she is left in the hands of an intelligent midwife who receives directions from the physician. To attend to this remains one of the main objects of the physician to whom the pregnant woman trusts her fate in the expected delivery.

How even this simple requirement is sinned against we see here and there, especially in many large cities. When the practitioner refuses the services of a midwife, when he himself undertakes the direction of the labor with the assistance of a so-called nurse with whom he shares the work of a midwife, then the result is but too readily some operative interference, the effect of which we see in the proofs submitted.

When Boër published his seven books on obstetrics, he concluded his review of the labors conducted by him with the words: "It will be observed that the number of artificial deliveries obviously diminishes in the later years, for time has taught me a better appreciation of the powers of Nature." It is well known how blessed for practical obstetrics have been the doctrines promulgated by him. We have not yet advanced far enough that we should dare to leave the paths along which Boër has led us.

AHLFELD (Marburg) read a paper on

THE CAUSES OF THE DIFFERENCE IN MORTALITY AND MORBIDITY
BETWEEN HOSPITAL AND PRIVATE OBSTETRIC PRACTICE,
AND THEIR REMEDIES.

The paper dealt directly with the most important disputed questions.

The author first demonstrated how the conception of puerperal fever, instead of becoming clearer, had grown more and more obscure, and that even the differences of opinion as to its origin had by no means been elucidated.

One thing, however, is certain—that since scrupulous cleanliness had become customary in the examinations and deliveries of women the sanitary relations had improved most markedly.

According to the author's standpoint, it should be added that since a series of deaths from puerperal fever and grave diseases still occur despite the most painstaking cleanliness, we are forced to assume auto-infection for some cases.

No conclusion has yet been reached by means of bacteriological examinations. Empiricism is far in advance of scientific investigation. Statistics form the sole decisive factor. If we had statistics of private practice equal in value with those of institutions, and if the latter were all collected on absolutely uniform and equally strict principles, we would be much farther in our knowledge of the origin and treatment of puerperal fever.

The author presented printed statistics of two thousand labors observed in the Marburg Maternity from April, 1884, to April, 1891.

I. Deaths (including all cases ending fatally after transfer to other clinics), fourteen, or 9.7 per cent.

Non-puerperal affections, four, or 0.2 per cent (struma-tracheotomy-pneumonia, tuberculosis, anthrax, grave heart lesion).

Puerperal non-septic affections, three, or 0.15 per cent (eclampsia).

Puerperal septic affections:

a. Received with grave septic infection, two, or 1.0 per cent.

b. Cesarean section (of seven cases), two, or 0.1 per cent.

c. Infected in the institution, three, or 0.15 per cent.

Remarks on the last three deaths chargeable to the institution: The three patients in question came to the institution to have premature labor induced. For this reason they were not examined by practitioners, students, and probably not even by the midwife, but only by the director and the assistant selected to direct the labor. The subjective antisepsis was like that in a laparotomy. The three cases have this in common—that the labor was protracted for from six to fourteen days, that the head had to be crowded through a very narrow pelvis, that fever set in after the prolonged labor, the child dying and the fever continuing during the puerperium. In two of these cases premature labor was artificially induced. As premature labor was induced one hundred and seven times during the time stated, the rate of mortality for this mode of delivery is 1.9 per cent.

II. Cases of puerperal disease of moderate and great severity, thirty-eight, or 1.9 per cent.

Of these twenty-nine were primiparæ, nine multiparæ.

Nature of the diseases:

Parametritis, sixteen cases (four severe, seven moderate, five slight).

Endometritis, sixteen cases (two with slight parametritis, one with thrombosis of large crural vessels, three with gonorrhea).

Diphtheritis vaginæ with endometritis, two cases.

Lochiocolpitis, one case.

Slight peritonitis, one case.

Inflammation of the ilio-sacral joints, one case.

Seat of the disease not demonstrable, one case.

Duration of the diseases: Patients were discharged in the second week, nine; third week, eleven; fourth week, seven; fifth week, four; sixth to ninth week, five; eleventh and twenty-second week, two.

Remarks on these diseases: In fifteen of the thirty-eight cases no examination was made by practitioners. In eleven cases operations were required; in four detachment of the

placenta or parts of it. A portion of the cases of parametritis followed deep cervical lacerations. Four or five of the patients were gonorrhœic (one of these had never been examined or irrigated; one examined but once). Extensive retention of the membranes and atypical course of the third stage of labor frequently preceded the disease.

Among the puerperal diseases of multiparæ parametritis does not appear. Only two of the diseased multiparæ passed through a normal labor.

From these statistics, together with former observations and experimental investigations, the author draws the following conclusions:

1. Our material proves that, with the prophylaxis customary in our institution, infection by the fingers or instruments is rare; that infection from without during the course of labor does not possess the importance for our institution which is usually ascribed to it, even for maternities; that it is rather abnormal processes during labor which lead to a disposition to the reception of deleterious noxa.

2. The easily disinfected external portions of the genital canal, although they are the first to suffer during an examination, and although they are most frequently injured during labor, were most rarely infected; while the portions of the genital canal which are with difficulty, if at all, accessible to disinfection, were most easily infected when injured.

3. Although there is no doubt that in practice outside of maternities the cases of death and severe disease are traceable to an insufficient disinfection, it is not correct to look for safety exclusively in obstetrical antisepsis; but the good results of the maternities are also partly the consequence of a more careful, more natural direction of the labor and the puerperium.

Accordingly the author, as on former occasions, inclines to the view that there is such a thing as auto-infection; that a part of the septic fatalities are unavoidable, but that in private practice the greatest number of deaths and severe diseases are due to direct infection.

The author endeavors to show that there is a disposition to puerperal infection even during the gravid and puerperal state; but that predisposing factors exist also in the direction of the labor which favor the capacity for infection of the tissues and the rapid spread of the micro-organisms in them.

These relations are not properly appreciated in the one-sided view that puerperal fever arises exclusively by infection from without, through fingers or instruments. The natural direction of the labor is likewise of great importance in the prevention of puerperal fever.

Therefore, the auxiliaries in the treatment of puerperal fever must consist—

1. In general hygienic measures.
2. In special hygienic measures (nowadays briefly called prophylactic).
3. In measures diminishing the disposition.

These propositions, briefly summarized, were submitted to the association in a printed form, while the author discussed the several paragraphs seriatim.

Propositions tending, in private obstetric practice, by utilizing the experience gained in maternities, to secure good results approaching those in institutions :

A. General hygienic measures :

1. Instruction of the public by oral and written communications; improvement of the care of the body in general.
2. Foundation of institutions for industrial districts and communities.
3. Foundation of ladies' societies in the country.
4. Improved practical education of medical students.
5. Improvement of the status of midwives.

B. Special hygienic measures :

1. Introduction of a simple, not complicated, method of disinfection, which must be suitable to practice among the poor.
2. Rare internal examinations.
3. Obligatory use of the thermometer in protracted labors.
4. Simple directions for the cleansing of puerperæ, and obliging midwives to use the thermometer twice daily and to record the temperature.

C. Measures diminishing the disposition to infection :

Among the most important points belonging under this head are : 1. Natural conduction of the third stage of labor, *i.e.*, the expectant method. 2. Treating atony of the uterus by external measures. 3. Closure by suture of all wounds of the external genitals. 4. Lessening the frequency of operations. 5. When the child is certainly dead, forceps, version, and other obstetric operations should be avoided, and perforation and embryotomy performed instead. 6. The forceps should be looked upon as a dangerous instrument; in place of it, the obstetric chair must be used, and Ritgen's or some similar manipulation employed. 7. The tamponade to be avoided in placenta previa; instead of it combined version (Braxton Hicks). 8. In the puerperium, the contraction of the uterus should be aided. 9. Interference at the onset of a disease is likely to be successful.

FRITSCH said with reference to Ahlfeld's paper : 1. That he finds it by no means difficult to explain the fever occurring after protracted labors, despite the use of antisepsis, by infection from without. The paths are rather too numerous.

2. That the internal genital organs had to suffer more dur-

ing examination than the external, hence the more frequent infection of the former is easily understood.

3. That he is in accord with Ahlfeld's view as to the great importance of an expectant treatment of the third stage of labor.

HEGAR, in reply to Dohrn's paper, said that the higher figures in the puerperal mortality statistics of Baden as compared with those of Prussia are not due to the fact that more puerperæ die in Baden than in Prussia, but that the statistics of Baden are more accurate.

In Prussia the officials compiling the statistics are not obliged to inquire for a puerperium when a death is reported, nor do we find any statement as to the length of time assigned to the puerperium.

In Baden the district physician compiles the statistics from the official death certificates, in which reference is made to the puerperium and its duration given as three weeks.

The fact that the mortality in Prussia, after having remained the same from 1870 to 1873 as it had been from 1816 to 1817, suddenly sinks from the year 1874 is to be explained by the transfer of the books from the clergy to the officials. The former were acquainted with the conditions of the families in their districts much better than the latter, and knew in most cases whether the death had occurred in the puerperium. The officials in large cities have the least knowledge of the condition of the families. These facts, and not perhaps the higher intelligence of the population, explain the lesser puerperal mortality of Berlin.

SCHATZ thought the good results of some midwives in many cases are not due to the fact that they are especially capable, but that they are particularly lazy and do not examine. For this reason little will be gained by making the directions for disinfection more stringent for the midwives; more may be expected from suspending midwives having a case of puerperal fever; in this way epidemics are avoided which materially raise the rate of mortality.

LEOPOLD.—In Saxony the district physician and the officials make inquiry whether the death occurred in the puerperium (six weeks). Since this has been done the rate of mortality has not changed.

If the mortality is to diminish, (1) the midwife should be obliged to inform the physician at the beginning of the disease; (2) internal examinations should be restricted as much as possible during labor; (3) prophylactic vaginal irrigations should be omitted.

FEHLING.—In Basle, since 1870, physicians and midwives are obliged to report puerperal diseases and deaths to the district physician. This strict requirement has certainly con-

tributed to the diminution of the mortality (from 7.9 per cent to 4.96 per cent). If this exact control is to be extended to larger districts, it will be necessary to make subdivisions.

The restriction of internal examination Fehling does not consider so important, since good results are obtained in clinics where many examinations are made. The same may be said for forceps extractions.

DUEHRSEN.—With strict antisepsis and better education of the physicians, properly selected operations will give better results than heretofore, in fact equally as good as they are now in clinics and polyclinics in which the prognosis of labors terminated by operation is no worse than that of spontaneous deliveries.

MEINERT.—Physicians are frequently called to labors by midwives as a favor, and then they do unnecessary operations.

Infection during labor is not the only cause of puerperal fever. The rupture of tubal and ovarian abscesses may likewise produce the disease.

MARTIN prefers to conduct labors without the aid of midwives, assisted merely by a nurse. In this way he has delivered from ten to twenty patients annually. The operative termination of labor was thus very rare. None of the patients suffered from disease. He inquired if Dohrn had had some certain experiences which led him to reject this mode of delivery so decidedly.

He stated in reply to Hegar that medical death certificates were official in Berlin, that therefore the Berlin statistics were relatively reliable.

If the course of the puerperium is to improve in general, then the clinical education of the physicians must become better; above all, greater polyclinical material must be secured, on which the student may learn to form an independent opinion.

MUELLER.—The rate of mortality in Switzerland has not diminished everywhere as it has done in Basle, according to Fehling; in the main it has remained unchanged.

FROMMEL, owing to the relatively limited material in his clinic, is obliged to have some patients examined very often (up to seventy-four times!), and still he has good results. It will not be possible to restrict internal examinations in clinical instruction; only the more expert will be able to dispense largely with internal examination.

J. VEIT.—The advanced student and the prospective midwife will not be able to dispense with frequent internal examinations; on the contrary, it is only by their use that they can reach the point where they can later duly appreciate the external examination. In the main, the discussion has shown

that the rate of mortality in institutions is undoubtedly much lower than in private practice.

LEOPOLD LANDAU defended Dohrn's view against Martin, that the physician should in every labor call in a midwife, for otherwise the midwives would suffer and become still worse.

DOHRN, in closing the discussion, said that he was opposed to the conduct of labor without a midwife, because the physician, lacking time, is easily led to resort to premature operative interference. He had seen several sad examples of the fact.

The lowering of the rate of mortality in Prussia since 1874 is not, as Hegar maintains, a seeming one, dependent on a change in the taking of the statistics, but it is absolute and might be explained by the stricter antiseptic directions for midwives introduced about this time.

AHLFELD, in closing the discussion, said, in reply to Schatz, that according to his investigations the high rate of mortality is not largely influenced by epidemics, but by isolated infections.

HOFMEIER (Wurzburg) read a paper on

THE DIAGNOSIS OF CARCINOMA OF THE BODY OF THE UTERUS.

After a brief historical review and a definition of carcinoma, in which he makes a distinction between malignant adenoma and carcinoma, he first entered upon the anatomical relations of corporeal carcinoma, partly based upon new investigations. On the strength of some preparations he advanced the view that carcinoma not rarely springs from the surface epithelia, and that in these cases it has more the character of alveolar carcinoma, although the proliferation of the epithelia often likewise takes the form of glandular depressions. In this connection he laid stress upon the fact that a certain appearance side by side under the microscope justifies conclusions as to the mode of development. In the formation of true glandular carcinoma the first step seems to be a regular and considerable increase in the glands, an adenomatous stage; then only follow further epithelial proliferations which, gradually advancing, destroy the uterine. This process ensues at all events slowly and late, and therefore it is impossible to comply with the demand to make the diagnosis only when it has been ascertained that the proliferation has extended through the muscular tissue. Besides, the alterations in the mucosa are so characteristic that its examination must absolutely suffice for the diagnosis. Moreover, the proliferation of the epithelial elements into the muscular structure seems to be always preceded by a partial irritation of the latter (small-cell infiltration).

After considering the anatomical relations he discussed the clinical symptoms under which corporeal carcinoma appears—the occurrence in nulliparæ or persons who had passed through few pregnancies, also its appearance beyond the climacteric. The first symptom is usually the occurrence of hemorrhages, at times discharge, only under certain circumstances colicky pains, which in that case are generally characteristic. The result of the manual examination is not very distinctive; the examination with the sound or after dilatation of the cervix usually furnishes valuable diagnostic points. But the only decisive point in the diagnosis of carcinoma is the anatomical examination of portions of the tumor which will present the above described characteristic appearances of alveolar or glandular carcinoma.

The objections raised against the reliability of this method were again discussed and refuted, especially the demand that the proliferation through the muscular structure should be demonstrable. The demonstration of epithelial elements by the side of the glands as proof of the malignancy of the process he thought to be very difficult and not available for the diagnosis, since a positive opinion can hardly be gained from it. Confusion with malignant adenoma is practically indifferent. Confounding carcinoma with endometritic processes should be avoided; in the latter the entire glandular epithelium appears uniformly altered, though the character of the cylindrical cells is preserved; in carcinoma the alterations are always very irregular, while the character of the cells is completely changed. Moreover, where symptoms appear late, it seems improbable that we have to deal with carcinoma if the cases are doubtful on microscopical examination.

In conclusion, a short definition was given of malignant adenoma, and its symptoms differentiated from those which result from chronic inflammatory conditions by proliferation of the glands with cyst formation in the substance of the uterus.

The points which appeared important to the author for the diagnosis of carcinoma of the body of the uterus were summarized in the form of conclusions.

LEOPOLD (Dresden) read a paper on

THE DIAGNOSIS OF CARCINOMA OF THE BODY OF THE UTERUS.

In order to gain an anatomical basis for the discussion of this subject, Leopold, with the assistance of Drs. Mironoff (Charkov) and Rindfleisch, made a microscopical examination of seventy-eight extirpated uteri; in forty-four of these the carcinoma was situated below and in twenty-seven above the internal os. Seven of the uteri had been extirpated for

other diseases. Three cubes of tissue were taken from each uterus—one from the infravaginal cervix, one from the region of the internal os, and one from the body. Each cube contained, besides the mucosa, a layer of the muscular tissue about three millimetres in thickness.

By the aid of this material three questions were answered:

1. How does cancer originate below the internal os, and what are its constituent elements? Where is the source of carcinoma of the infravaginal cervix, and where that of the supravaginal cervix; is it possible to separate these two forms anatomically, and is such separation practically desirable?

2. What changes occur in the corporeal mucosa in carcinoma of the infravaginal and supravaginal cervix?

3. How does cancer originate in the body of the uterus, and which are the best evidences of its presence?

In answering these questions, Leopold arrived at the following conclusions, which he illustrated by drawings from the sixteen completely extirpated cancers:

1. Carcinoma of the uterus, whether seated below or above the internal os, is always of epithelial origin; a connective-tissue carcinoma does not occur in the uterus.

2. What we call carcinoma is an atypical epithelial new formation (Thiersch-Waldeyer-Williams).

3. Uterine carcinoma is most frequent below the internal os, springing from the epithelium of the vaginal portion, rarely from the cervical mucosa. A large number of so-called cervical carcinomata are cancers of the vaginal portion. To separate the two forms is not desirable; both call for the same operative treatment—whenever possible, total extirpation.

4. Incipient carcinoma of the vaginal portion is not so rare as is generally assumed.

5. Apparently primary cervical cancers are still in causal connection with the pavement epithelium of the vaginal portion.

6. Cancer of the vaginal portion reached the internal os in twenty-five per cent of our cases.

7. In cancer of the vaginal portion the mucosa of the uterine cavity is usually in a state of chronic inflammation. Sarcomatous degeneration was not observed in it, and adenoma very rarely.

8. In cancer of the vaginal portion isolated carcinoma of the body of the uterus may also be met with.

9. Primary corporeal carcinoma occurs almost always superficially, rarely in a nodular form. The first beginnings manifest themselves by thickening of the mucosa, the formation of glandular offshoots, with new formation of vessels in or near the innermost muscular layers; atypical epithelial prolifera-

tion in the form of tassels and alveoli; growth inward and outward, with loosening and gradual dissolution of the muscular structure.

10. The epithelial proliferation takes place in the form of papillæ which are extremely vascular. Corporeal carcinoma, therefore, should histologically receive the name papillare or papillomatosum.

11. The term "malignant adenoma" is quite unsuitable and causes confusion.

The word adenoma defines merely a benign glandular new formation. If the latter spreads atypically—that is to say, with displacement of the neighboring tissue—it ceases to be adenoma and becomes carcinoma papillomatosum of the body of the uterus.

12. In cases of slight or extensive spread of corporeal carcinoma, the microscopical examination of pieces scraped out will furnish the best diagnostic landmarks by the demonstration of sprouting glands, vascular new formation, and the framework of muscular fibres. In cases where the destruction is greatest, all the other auxiliaries in examination (sound, rectal exploration, etc.) will suffice for the formation of a diagnosis, if repeated diagnostic curetting should fail by removing only structureless detritus of tissue.

THEODOR LANDAU.—It is impossible to make a certain diagnosis of carcinoma from small pieces of mucous membrane removed by the curette from the body of the uterus, because the mucosa covering a myoma presents the same appearances as Ruge's carcinoma. It is equally impossible to judge of the course of development from the appearances presented side by side in microscopical preparations (specimens submitted). He differed from Leopold in distinguishing, like Hofmeier, a non-benign adenoma which he calls adenoma destruens.

J. VEIT believed that in future many points in his and Ruge's examinations will be found to be correct, though they are at present disputed. Especially Leopold's drawings, which are said to prove that carcinomata which are apparently cervical really spring from the vaginal portion, are not convincing to him at all. It would seem to be quite immaterial whether a non-benign adenoma is called malignant or destructive. This is not the place to discuss the histogenesis of carcinoma.

LOEHLEIN claimed that Ruge and Veit's division of carcinoma into those of the vaginal portion, the cervix, and the body is very useful clinically.

He mentioned a case which he had curetted eleven years ago, and had found interstitial endometritis; now the patient,

61 years old, who in the intervening years had always lost some blood, is suffering from malignant adenoma.

ZWEIFEL had observed the formation of prolongations, similar to those mentioned by Leopold, in a case of tubal sarcoma.

ABEL.—The present discussion has shown that views differ with regard to carcinoma and adenoma. Waldeyer speaks of adenoma so long as the distinct type of the glands remains preserved. Carcinoma he calls atypical epithelial cords which proliferate through the tissue and destroy it. Adenoma, too, may become malignant. In pieces removed by the curette the microscopical appearance of malignant adenoma is the same as that of a mucosa passing over a myoma. Hence it is only possible to diagnosticate malignant adenoma clinically when a portion of the muscular tissue can be examined at the same time. It is different when we meet with medullary masses which on microscopical examination no longer show glandular structure but atypical epithelial tubes. Then the clinical diagnosis of carcinoma may be made with certainty, even though no muscular structure is at hand for examination. Only the earliest stages of carcinoma can be clinically recognized with certainty by the microscope. A simple epithelial proliferation within a gland does not prove the existence of carcinoma.

HOFMEIER, in closing the discussion, said, with reference to Leopold's remarks, that he still adheres to the division of carcinoma into that of the cervix and of the vaginal portion, although he is willing to admit that many of the apparently parenchymatous carcinomata of the substance of the cervix may have sprung from the external surface of the vaginal portion. He also thought the term malignant adenoma to be indispensable, and not lightly to be included in the definition of carcinoma. He was unable to see the difference emphasized by Th. Landau in the interpretation of alterations in the mucous membrane, according as the pieces examined were taken from the extirpated organ or removed by the curette.

LEOPOLD, despite the objections made by J. Veit, still maintained that most of the apparently cervical carcinomata are really tumors of the vaginal portion. He does not believe that carcinomata spring from connective tissue, and, according to the instruction he had received from Thiersch and Waldeyer, he must term carcinoma what others present have called malignant adenoma. Of course, clinically this difference in the nomenclature is immaterial, but the term malignant adenoma can only lead to confusion.

(To be continued.)

REVIEWS.

DES RÉSULTATS IMMÉDIATS ET ÉLOIGNÉS DU TRAITEMENT ÉLECTRIQUE DES FIBROMES UTÉRINES PAR LA MÉTHODE DU DOCTEUR APOSTOLI.—THE IMMEDIATE AND FINAL RESULTS FROM THE ELECTRICAL TREATMENT OF UTERINE FIBROIDS BY APOSTOLI'S METHOD. By M^{lle}. FÉLICIA JAKUBOWSKA. Paris, 1890.

The author is a disciple of Dr. Apostoli, and gives the result of following his method in thirteen cases. She precedes her account with a historical sketch, a description of the technique employed, a review of the criticisms that have been passed upon Apostoli's work. The following are her conclusions:

1. The most constant result of the electrical treatment of uterine fibroma by this method is the rapid restoration of the general health, which renders this superior to all other modes of treatment.

2. The arrest of hemorrhages, which is quickly obtained in the majority of cases, and follows slowly in a few rare cases, and is exceptionally wanting where there are lesions of the annexes and fibro-cystic tumors.

3. The pains are overcome, except in a few rebellious cases.

4. The tumors generally diminish in volume; sometimes they disappear completely. They are frequently made movable, either by destruction of adhesions or by pediculization. It is exceptional when their development is not arrested.

5. The results thus obtained are persistent. Ten of the thirteen women treated have preserved entirely the benefits of their cure during a period of from four to seven years. The symptoms presented by the others were insignificant in comparison with their previous state.

G. P.

L'ASEPSIA ET L'ANTISEPSIE À L'HÔPITAL BICHAT.—ASEPSIS AND ANTISEPSIS AT THE HOSPITAL BICHAT. Service de Chirurgie de M. le Docteur FÉLIX TERRIER (1883-1889). By MARCEL BAUDOIN, Ancien Interne à l'Hôpital Bichat. Publications du Progrès Médical. Pp. 214. Paris, 1890.

This book contains an elaborate description of the aseptic and antiseptic procedures which are employed at the Hospital Bichat. After a general discussion of the arrangements of the hospital, the operating room, and surgical appliances,

with a statement of how they are all used and all kept aseptic, the writer considers the disinfection of the different portions of the body.

Chapter IV. treats of vagino-uterine antisepsis. The micro-organisms which infect the genital passages of women are as yet poorly known; but the researches of Winter, Steffek, Doederlein, and others show as many as twenty-seven.

Iodoform tampons are much used, as also pencils of iodoform and bichloride of mercury. The great disinfectant in all surgical procedures is the bichloride of mercury in solution of five hundred and a thousand. He recommends the latter for vaginal injections. It has been the experience of the reviewer that such strong solutions of bichloride as one to a thousand will give rise to considerable irritation. The writer says that we ought not to leave too long a large quantity of the solution in the depths of the vagina, as there is risk of poisoning from the absorption.

The book is interesting from its careful, detailed accounts, and as giving an epitome of the latest practices in asepsis and antisepsis, and also as showing how firm a belief has taken hold of the profession in the harmfulness of the micro-organisms, which the French writer calls "parasites," and speaks of in a dramatic way as "encamping" in the buccal cavity and "living" in the different passages of the body.

The third part of the work is taken up with a review of the surgical procedures.

There is little if anything new in the work for American readers, but it embodies a practical statement and sets forth a system of hospital asepsis and antisepsis which will be found useful.

G. P.

FONCTIONS DU FORCEPS: PRÉHENSION, PRESSION, ET RÉDUCTION DE LA TÊTE. NOUVEAU FORCEPS ET NOUVEAU TRACTEUR. THÉORIES ET EXPÉRIENCES À L'APPUI DÉFENSE DU PÉRINÉE.—THE USES OF THE FORCEPS, ETC. By le Docteur CHASSAGNY, Lauréat de l'Institut, Membre et Ancien Président de la Société National de Médecine de Lyon, etc. Pp. 380. J. B. Baillière et Fils, Paris, 1891.

The first part of this work is taken up with a description of the mechanism of labor; the second with a description and defence of new forceps, the invention of the author. He claims for them distinction in the locking, the pressure brought to bear on the head, the curvature of the blades and their length. These statements he establishes with mechanical drawings and reports of cases.

The third part of the book is devoted to a description of a protector of the perineum during labor. This is composed of an oval disc, thirteen centimetres long by ten centimetres

wide, made of moleskin or waxed cloth. It is affixed to the perineum by means of strings which pass backward between the nates to an abdominal belt. It is furnished with two loops through which the index and ring fingers of the accoucheur can pass, so that the hand can hold it in position and control the movements of the head and support the perineum.

The author claims that the use of this arrangement in the service of the Maternité has been extremely successful, absolutely leaving nothing to be desired. It acts like an artificial perineum, protecting and sustaining that of the mother.

GRACE PECKHAM.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Vol. iii.; pp. 440. Thirteen illustrations. Published by the Association. Atlanta, 1891.

The third volume issued by this active and flourishing organization is somewhat increased in size over that of last year, and maintains a standard which proves in a flattering manner the value and success of the work it is doing. Of the thirty-one papers, those of Maury and Reed, which have already appeared in our pages (see pp. 1 and 172, 1891), are a fair sample. Its next meeting will be held in Richmond, Va., beginning the second Tuesday in November, and promises to be exceptionable in enthusiasm and interest.

AN INTRODUCTION TO THE DISEASES OF INFANCY. By G. W. BALLENTYNE, M.D., F.R.C.P.E., Lecturer on Diseases of Infancy and Childhood, Edinburgh School of Medicine; Lecturer on Midwifery and Gynecology, Medical College for Women, Edinburgh; Physician for Diseases of Children, Cowgate Dispensary, etc. With colored and other illustrations. Pp. 235, 8vo. Oliver & Boyd, Edinburgh, 1891.

This is a most interesting and well-written book, which gives a rational conception of the differences which exist between disease as it occurs in the infant and is met with in the adult. Disease, aside from a certain moiety which is truly peculiar to infancy, is in children modified by the anatomical and physiological conditions then in existence, and it is to a close, and in many places an original, study of these conditions that the author has devoted himself. He considers that the physician who applies himself to the study of the diseases of early life is already cognizant of the symptoms and therapeutics of adult maladies, and that his immediate desire is to be able to apply his already acquired knowledge to the conditions met with in infancy; with this end in view, he omits all that is not distinctively peculiar to this period. Of the thirteen chapters, six are devoted to the regional anatomy of the infant and seven to an exposition of its physiology and hygiene.

ABSTRACTS.

1. P. BAUMM: OPERATION FOR VESICO-CERVICAL FISTULÆ THROUGH THE BLADDER (*Archiv für Gynäkologie*, Band xxxix., Hft. 3).—In order to operate successfully upon a vesical fistula it is absolutely necessary to have a clear view of the field of operation. This is often extremely difficult in cases of vesico-uterine and vesico-cervical fistulæ, and in those cases of vesico-vaginal fistulæ in which there are cicatricial adhesions which prevent their being drawn down. Trendelenburg proposed a method of operating (*Volkmann'schen Sammlung klinischer Vorträge*, No. 355) which overcomes this difficulty, namely, performing a suprapubic operation, opening the bladder to freshen the edges and to sew up the fistula, and then to close the bladder again, leaving an opening for drainage; the opening in the abdomen to be sewed up in part, and the prevesical space to be tamponed with iodoform gauze. Trendelenburg reports three cases operated upon in this manner. The first two were unsuccessful, and colpocleisis had to be performed later on. The third case made an excellent recovery.

Author reports a case of vesico-cervical fistula in which he operated first per vaginam, the fistula only healing in part. He then determined to operate according to the Trendelenburg method. The operation was only partly successful, as he was compelled to operate per vaginam again, and even then a fistulous opening remained in the abdominal wound. He then discusses the method, laying special emphasis on the following points: The technique of the operation is a simple one. It is absolutely necessary for the pelvis to be elevated, for only in this way is it possible to obtain a clear view of the field of operation. This is also facilitated if the bladder is pushed up from the vaginal side. The peritoneum is not injured, as the position of the patient causes it to fall up toward the diaphragm. In the case operated upon it lay three to four fingers' breadth above the symphysis pubis. The amount of hemorrhage is slight. It is essential to tie the sutures on the vaginal side, this being done by using two needles, one on each end of the thread, and passing them downward and allowing an assistant to tie them. This is not always easy, but it would scarcely be safe to have the knots in the bladder, lest it might produce a tendency to the formation of stone. It is advisable to use silkworm gut or wire in preference to

silk or catgut, as the latter absorb the urine and thus may cause decomposition. A disadvantage in the operation consists in the fact that after its performance it becomes necessary to change the patient's position from one side to the other many times during the first day. This is quite painful. The knees have to be kept drawn up to relax the recti muscles. The urine must not become alkaline after the operation. If it does it becomes necessary to give acids to overcome this tendency.

LEONARD S. RAU.

2. SÉGOND, PAUL: VAGINAL HYSTERECTOMY FOR THE TREATMENT OF PERI-UTERINE SUPPURATION (*Annales de Gyn.*, March, 1891).—This operation was suggested by Péan, and described under the name of uterine castration. He believes it to be applicable to every case of peri-uterine inflammation in which a laparotomy with complete removal of the appendages is indicated, and considers it a less serious operation, productive of better results, less apt to be followed by fistulæ, and avoiding all the discomforts incident to an abdominal cicatrix. Péan's views have not been very cordially received, Terrier alone having admitted that the procedure might in certain cases be useful. Terrillon and Pozzi have lately expressed their distrust of this method. Ségond reports twenty-three cases in which he performed Péan's operation for double pyo-salpinx, pyo-salpinx and pelvic peritonitis, double hemato-salpingitis, bilateral catarrhal salpingitis with sclerocystic degeneration of the ovaries, retroflexion and adhesion of the uterus complicated by sclerocystic degeneration of the ovaries, tuberculous double pyo-salpinx, retro-uterine suppuration and multiple fibromata adherent to the uterus, etc. Out of the number there were nineteen cures and four deaths. The latter he attributes severally to shock, incompleteness of the operation, tubercular peritonitis, and exhaustion. He calls attention to the fact that without surgical interference the patients would have died, and that in three of the cases laparotomy would certainly have been fatal.

Of the successful cases, six had suppurative lesions limited to the ovaries and tubes, and seven had non-suppurative lesions; these would undoubtedly have given good results had laparotomy been performed. The remaining six were of a more serious character: extensive suppuration, thickened false membranes, fibromata, great exhaustion and depression, formed some of the complications which would have rendered laparotomy inefficacious or harmful.

The author, while acknowledging that these cases are too few in number to be conclusive, considers them of sufficient importance to warrant experimental consideration on the part

of surgeons. He unhesitatingly indorses M. Péan's views, and believes the indications for vaginal hysterectomy to be the same as those for removal of the appendages by laparotomy, reserving the operation, however, for cases where a *bilateral* removal is necessary. This reservation should form an absolute law to all surgeons.

The author states that Péan's rules for the operation are to be strictly followed. When the uterus is fixed by adhesions it will have to be removed in sections. The special instruments devised by Péan are not only useful but necessary.

The patient should be in the left lateral position in every case where there is difficulty in reaching the uterus, otherwise dorsal decubitus is preferable.

The vaginal mucous membrane having been incised and the cervix freed, the section of the uterus is accomplished by four chief manœuvres: (1) liberation of the anterior and posterior surfaces of the uterus; (2) section of the broad ligaments; (3) section of the uterus into two portions; (4) removal of these portions.

Even in comparatively simple cases, where it would seem easy to remove the uterus in its entirety, fastening Riche-lot's large forceps upon the broad ligaments to assure hemostasis, it would be better to proceed according to the method described, as this permits of freer action and more careful observation. Should the uterine appendages be so closely adherent to neighboring parts that their removal might cause injury to vital organs, we must limit the operation to removal of the uterus alone.

Ségonc considers vaginal hysterectomy preferable to ovariectomy by laparotomy, for four reasons: (1) the operation is less grave; (2) the cures are more complete and durable; (3) there is no suprapubic cicatrix; (4) the patient is not obliged to wear a belt.

Hysterectomy is of especial value in the more serious operations; the uterus is simply enucleated, as it were, from the false membranes surrounding it, pus cavities are opened and perfectly drained, and the intestinal adhesions, whose detachment forms so dangerous an element in laparatomies, are untouched.

Accidents following the operation are infrequent, and the few noted by Ségonc were of slight importance.

Removal of the tubes and ovaries, while often successful, may leave various troubles unremedied: endometritis may occur, a suppurative process may return. The uterus being the usual starting point of these lesions, it is logical to suppose that its removal will give a more perfect cure.

In short, the author considers that the operation under

discussion is destined to render valuable assistance in gynecology.

A. R.

3. POZZI, S.: THE TREATMENT OF PELVIC SUPPURATION AND INFLAMMATORY LESIONS OF THE APPENDAGES BY VAGINAL HYSTERECTOMY (*Extr. from Gaz. hebdomadaire de Médecine et de Chirurgie*, April, 1891).—The author felt a distrust of M. Péan's method at the outset, because it seemed not to be founded upon true physiological principles. Realizing, however, that empiricism sometimes leads to valuable results, he put aside prejudice and carefully followed the discussion upon the subject, studied the published reports, witnessed Ségond's operation, and twice performed it successfully himself. His opinion is unaltered: he considers hysterectomy inferior to laparotomy in the treatment of pyosalpinx. He believes, moreover, that its use will lead to mischievous practice in the surgical treatment of diseased appendages.

M. Ségond's paper is entitled "Treatment of Pelvic Suppuration by Vaginal Hysterectomy," but both he and Péan in actual practice apply the operation to *all inflammatory lesions* of the ovaries and tubes. How could it be otherwise when by clinical examination it is so often impossible to diagnose between pyosalpinx, hemato-salpinx, hydro-salpinx, parenchymatous salpingitis, polycystic degeneration of the ovary, and a small cyst of the broad ligament?

The question is really this: Is vaginal hysterectomy preferable to laparotomy in the treatment of inflammatory lesions of the appendages, whether suppurative or not?

The three principal arguments adduced in its favor are: (1) greater efficacy; (2) lessened danger; (3) absence of cicatrix.

As to the first, it is not to be denied that this indirect method gives good results, but are they better or even so good as those obtained by direct removal of the diseased organs?

(a) *Efficacy of hysterectomy for pyosalpinx and pelvic abscess.*—These cases may be subdivided into those where—

1. The sac is free.

2. Sac is adherent, but can be enucleated (with or without fistulæ).

3. Sac adherent; cannot be enucleated; fistulæ present or absent (true pelvic abscess).

In the first and second cases, laparotomy would permit a complete removal of the diseased parts. By hysterectomy even the slightly adherent or perfectly free sacs cannot always be removed, and pathological tissues are necessarily left in the pelvis, where, to be sure, they may be absorbed or tolerated, but where there is a good chance of their causing immediate or subsequent infection. These cases are by far the most frequent in occurrence.

A few cases there are, to be sure, of pelvic abscess where extirpation of the sac is an impossibility even by laparotomy, but these are rare. The author found three out of thirty-nine cases, and Bouilly three out of thirty, making a proportion of one in ten. These patients were completely cured after laparotomy, cleansing of the cavity, washing, and insertion of a tampon of iodoform gauze according to Mikulicz's method, which proves that even difficult cases may be cured by laparotomy.

Much stress has been laid upon the incurable lesions resulting from fistulous openings, transforming the pelvic floor into a "purulent sponge," which is an exaggerated figure of speech. Open fistulæ, whether in the rectum, vagina, or abdomen, are assuredly a complication, but less grave than might at first be supposed. They invariably close after a laparotomy, provided that the diseased parts are removed, or the cavity thoroughly cleaned and antiseptically tamponed. Iodoform gauze forms a perfect medium of capillary drainage. Any fistulæ persisting after such treatment can only be old fistulæ from incomplete operation, or of recent formation from infected sutures.

Hysterectomy certainly permits of free drainage. Pozzi gives it credit for this, and considers it valuable as a *secondary* resource, should laparotomy be incomplete.

(b) *Efficacy of hysterectomy for non-purulent inflammatory lesions of the appendages.*—So many lesions of the tubes and ovaries may simulate suppuration of the tubes that this operation is most likely to be widely applied, if used at all. The dangers of its general use are manifold, the principal ones being removal of the uterus of a patient in whom the appendages of one side only are affected beyond help, and leaving in place diseased ovaries or tubes adherent to the pelvic walls. The advocates of the method claim that it is undertaken only when the lesion is bilateral; but errors of diagnosis are too easy to make this precaution very valuable. Both sides may apparently be affected, but in reality only one be seriously diseased, the tumefaction of the other being caused by a small cyst of the broad ligament, or serous infiltration due to catarrhal salpingitis. As to the after-results of ovariectomy, pain rarely persists, except when the organs removed are but slightly diseased, and even then often disappears ultimately. Metritis may exist for a while, but usually ceases because of the uterine atrophy following removal of the ovaries. Curetting will remedy this trouble in any case, and its severity and importance have been greatly exaggerated. The relative *gravity* of the two operations is the most important point in the discussion, as well as the most difficult to decide.

From a theoretical point of view even, the author gives the preference to laparatomy. In those cases where the uterus is immovable, the abdominal opening gives free access to the diseased parts, and touch can supplement sight. The vaginal opening necessitates groping at the end of a deep and narrow cavity, hemostasis depends upon a lucky application of the forceps, and the lesions, if too high or too far forward, may be inaccessible.

The statistics so far obtained are also in favor of laparatomy. Bouilly and Ségond are of equal rank as surgeons. The first, out of thirty-three laparatomies for *pyo-salpinx*, had four deaths; the second, out of twenty-three hysterectomies for *pyo-salpinx* and *other tubal lesions*, had four deaths.

Pozzi himself, from February 1st, 1889, to March 10th, 1891, operated upon thirty-nine cases of *pyo-salpinx* and pelvic abscess, several of them being cases of the "purulent pelvic sponge" spoken of by Messrs. Ségond and Réclus as species of *noli me tangere*. There were in all three deaths, thirty-six complete cures. This list in itself shows better proportionate results than the list of hysterectomies: he further strengthens it by the addition of cases operated upon, during the same period of time, for non-suppurative lesions of the tubes and ovaries, which is as follows:

Parenchymatous salpingitis...	19
Hydro-salpinx	3
Hemato-salpinx.....	3
Sclerocystic ovaritis	12

This he supplements by eight cases operated upon during the previous month: three of *pyo-salpinx*; two of *hemato-salpinx*, of which one was complicated by suppuration and the other by an enormous hematocele; two of large polycystic ovaritis, and one sclerocystic ovaritis. All the cases but one were followed by cure; this one was *hemato-salpinx* consecutive to tubal pregnancy and complicated by hematocele. The uterus was friable, and the operation had to be terminated by abdominal hysterectomy.

The total result, then, is eighty-four operations: eighty cures, four deaths. Hysterectomy has no such results to show, and, while its list of cures is on the increase, science must consider acquired results rather than results hoped for.

Hysterectomy presupposes infallibility of diagnosis. The first incision causes sterility. Laparatomy, on the other hand, permits of a rectification of an error of diagnosis before any decided step has been taken. As to the third argument, the absence of deforming cicatrix, it will have less weight with surgeons than with their patients, and it has been much exaggerated. The incision is rarely larger than two and one-

half to three and one-half inches, and never larger than four and one-half. Moreover, a suture in layers will reduce the abdominal cicatrix to a mere line, and give it sufficient strength to obviate all necessity for wearing a belt. A. R.

4. SÉGOND, P.: VAGINAL HYSTERECTOMY (*Arch. de Toxicologie et de Gynécologie*, May, 1891).—In this article Dr. Ségond replies to the various objections urged against Péan's process of vaginal hysterectomy, and begins by classifying the participants in the discussion into three groups: 1. Those who accept his conclusions without reserve, Réclus and Nélaton; 2. Those who are absolutely opposed to the method, Pozzi being the only representative; 3. Those who acknowledge the superior advantages of hysterectomy in special cases, among whom are found Terrillon, Bouilly, Richelot, Terrier, Lucas Championnière, Routier, Bazy, and Reynier.

He claims that his friend Pozzi entered into the discussion without having heard his communication, without having seen the removal of the uterus in sections, and without having followed the history of the cases. He states that the other opponents of the method have conceded vaginal hysterectomy to be the best operation in cases of grave pelvic suppuration characterized by fixation of the uterus between multiple pus sacs. They have all accused him of generalizing too much, and, in replying to the objections, he adopts Terrier's classification of cases, as follows:

1. *Return of Suppuration after Laparotomy*.—Even Pozzi acknowledges vaginal hysterectomy to be the only operation possible under these circumstances.

2. *Suppurating Pelvic Peritonitis with Fixation of the Uterus, Extensive Adhesions, and Multiple Purulent Pouches*.—Under these conditions, all excepting Pozzi give the preference to vaginal hysterectomy. Three of the authorities mentioned state that laparotomy is dangerous, the operation often only partial, drainage insufficient, and shock frequent.

3. *Readily Enucleated Pus Sacs*.—The author states that his opponents, Pozzi in especial, ridicule the importance which he gives to the absence of an abdominal cicatrix. He reiterates his belief that a cicatrix, however small, is always a weak spot, more especially if a drainage tube has had to be inserted. Quite recently in his experience, a young girl, upon whom he performed laparotomy two years previously, developed a hernia, although the cicatrix was scarcely visible, very short, and to all appearances perfectly strong. He bears testimony to the excellent results obtained by Pozzi, but still prefers to avoid a cicatrix whenever it be possible.

As to the prognosis of the operation itself, he considers a judgment based upon mere numbers of less value than one formed after consideration of all the circumstances attendant upon a case. The gravity of the conditions under which he performed many of his operations surely enhances the value of the beneficent results. He repeats his opinion that in cases of ordinary severity, in which laparotomy is indicated and usually followed by good results, the prognosis of vaginal hysterectomy is quite as favorable. In cases where removal of the appendages by laparotomy necessitates dangerous procedures, hysterectomy reduces the chances of death to a minimum while accomplishing a perfect cure. The vaginal operation leaves adhesions undisturbed; their laceration is one of the most dangerous complications in laparotomy, and he simply denies the validity of the claim that the operation under discussion is impossible or dangerous in the case of the existence of intestinal adhesions. As to the duration of the beneficial results, he cannot make a definite statement, as only seven months have elapsed since his first operation. Yet some conclusion may be reached from the fact that all of his patients, except one, are in perfect condition. His theoretical arguments, he says, have not been refuted. M. Pozzi has spoken of the operation as *blind*, and the wounding of the intestines as the least of the evils attending it. The author considers his description of the operation as a sufficient reply to this point, and thinks that when M. Pozzi has himself performed the operation he will be convinced of this fact.

Incomplete the operation often is, as it purposely leaves the intestinal adhesions untouched, and does not remove the appendages unless this can be done readily and with a full view of the organs. For this very reason the prognosis is less grave than in laparotomy. In complicated cases laparotomy is open to the same reproach, and does not even remove the uterus; whereas in hysterectomy the chief cause of disturbance is abolished, and what is left gradually atrophies, while a cicatricial process obliterates all the diseased portions, leaving no possible chance of a return of the lesion.

The operation certainly is a difficult one, requiring experience and dexterity, but this should constitute no objection in the eyes of a skilled surgeon.

4. *Non-suppurating Salpingo-ovaritis*.—Laparotomy is certainly rapidly performed, easy of accomplishment, and usually so successful that it seems at first sight strange to urge the substitution of a longer and more difficult operation. Yet Dr. Ségond is convinced that the ultimate results are so much better as to justify the procedure.

To the very just observation of M. Bazy that the operation

might be often performed where really not indicated, he replies that this could not be the case if it be reserved for only the cases in which bilateral removal of the appendages is *clearly* indicated and the disease incurable by all medical measures.

He considers the most formidable of all the arguments against the operation to be the liability of error in the diagnosis of suppuration. Even exploratory puncture will not solve the problem, for, though pus may be found, there is nothing to prove whether it come from the ovary, the tubes, the peritoneum, or elsewhere. But, according to his views, suppuration by no means constitutes the only indication for hysterectomy. The fact of the lesions being bilateral and incurable are the important indications. The diagnosis is often difficult, and errors may sometimes occur. In doubtful cases laparotomy is preferable, but where the diagnosis is sure his conviction of the superiority of vaginal hysterectomy is unshaken.

A. R.

5. FREDERICQ: THE TREATMENT OF AMENORRHEA BY SWEDISH MOVEMENTS (*Gaz. de Gyn.*, April, 1891).—Thure Brandt treats this affection by Swedish movements, without massage or any local treatment whatsoever, the exercises being of the kind called "congestive" to the pelvic organs. Of these there are two varieties, the one consisting of movements performed by the patient alone, the other requiring an assistant. There are ten of the first variety, which are to be practised once a day in regular order, a rest of five minutes being taken between each movement. The exercises are as follows:

1. Elevation of the arms, and deep respiration in a walking position. To be done five or six times.
2. Rotary movements of the feet in a semi-prone position.
3. Lateral flexion of the trunk, in standing position, feet far apart, arms uplifted.
4. Bending and unbending of the knee in a standing position.
5. Flexion of the body forward and back, standing position, feet apart, arms lifted.
6. Circular movement of thigh in an upright position.
7. Running movement without leaving the spot, knees lifted high.
8. Circular motion of the trunk in upright position, feet apart.
9. Abrupt backward motion of the trunk in a kneeling position, the knees apart.
10. No. 7 done very slowly.

The movements requiring an assistant are divided into the

feebly and the strongly congestive. There are nine of the first class, consisting of motions of head and arms, flexion of leg and foot against the resistance of the assistant, percussion of back, circulatory motions of trunk, torsion of the body in the sitting and kneeling positions, elevation of the chest by the assistant, the patient lying down.

The strongly congestive movements include five of the first list in a little different order, and three new movements, viz., lateral movement of the uplifted arms by the assistant, the patient resisting, followed by action on the part of the patient, the assistant resisting; bending and straightening the knee in an upright position against the resistance of the assistant, and a circular movement of the thighs. The ideal treatment for amenorrhea would be the execution of these movements, one after the other, without fatiguing the patient. As this is usually impossible, a judicious choice should be made, adapting the movements to the condition of the patient. Feeble and anemic subjects should perform the easiest exercises only, and begin with a few at a time. We hope later to be able to publish the results of our experimentation with this treatment.

A. R.

6. POLACCO, ROMOLO: THE USE OF ICHTHYOL IN GYNECOLOGY (*Annali di Ostetricia e Ginecologia*, Milan, March, 1891).—While widely employed in dermatology, ichthyol has been very little used in gynecology. The first to apply it in this connection was K. W. Freund, who obtained such excellent results that he considers it important, "in all inflammatory diseases of the female genitalia, always to give it a trial before advising operative procedures." Drs. Reitmann and Schönauer next tried it in one hundred cases with really brilliant results, and testify that often women, who could scarcely drag themselves to the clinic because of pain and exhaustion, returned twenty-four hours after the application of the first vaginal tampon without the slightest difficulty in walking. The absorbent action of the ichthyol was found to be incomparably greater and more rapid than that of all agents heretofore used.

Richard Bloch, of Vienna, likewise applied it in a number of cases, even carrying it into the uterine cavity, and found it most beneficial. Kötschau used it alone and in combination with other therapeutic measures, as massage, baths, etc., and obtained good results. In the out-patient department of the Ospedale Maggiore and in the hospital itself, it was tried upon one hundred and thirty patients, and was found to be a valuable auxiliary in the treatment of diseases of the appendages. In para- and perimetritis, during the acute stages, hot abdominal stupes, vaginal tampons of glycerin, and antipyrin

internally, constituted the treatment; ichthyol was given, after subsidence of the febrile symptoms, in the form of ointment upon the abdomen, vaginal tampons, or, better yet, painting of the fornices with ichthyol and glycerin; and the internal administration of capsules of one and two-third grains three times a day and four grains twice a day.

The cases in which this remedy was tried included peri- and parametritis, ovaritis and periovaritis, salpingitis, ovario-salpingitis of puerperal or gonorrheal origin, parenchymatous metritis, and endometritis.

No other of the many remedies employed showed so prompt, definite, and sure analgesic effect as ichthyol. In only one case was this action at all delayed.

Its absorbent powers were less marked, and yet in many cases extensive exudations were absorbed more rapidly, quietly, and completely than by the use of any other agent. Neither the external nor internal administration was attended by any disturbance whatsoever, except that a slight erythema was produced by an ointment of twenty-per-cent ichthyol in lanolin, which was entirely obviated by the use of a ten-per-cent ointment. The combination of vaseline with ichthyol was found to be better than that of lanolin.

Intra-uterine injections of a ten-per-cent solution of ichthyol in glycerin for endometritis caused no inconvenience, even when applied with a Braun syringe of three times the ordinary capacity.

Polacco used these injections for hemorrhagic endometritis with most excellent results. He appends a list of cases of inflammatory diseases of the uterus and appendages treated by ichthyol, which substantiate his statements of the value of the drug in gynecology, and adds in conclusion that its analgesic properties are proved beyond question, and its absorptive powers are certainly equal to those of potassium iodide, to which it is superior because so perfectly tolerated by the system. In some cases sharp pain, which persisted in spite of injections of morphine and doses of one and one-half grains of codeine given during one night, yielded at once to generous applications of ichthyol.

A. R.

7. MABBOUX: VESICAL GOUT IN WOMEN (*Annales de Gyn. et d'Obst.*, June, 1891).—The female bladder, because of its anatomical conformation, the shortness of its canal, and its relations to neighboring organs, possesses at the same time a vulnerability and a resistance to inflammatory affections.

Many writers touch but lightly upon the subject of cystitis in women; gynecologists, however, know that it is by no means infrequent, and that it often complicates congestion of the utero-ovarian apparatus. For the last twenty years both

English and French scientists have studied the influence of uterine disease upon cystitis so thoroughly that there seems little left to discover in that line.

Mabboux believes that many cases of cystitis in the female are due to gout, having reached this conclusion from an observation of cases where all other causes were absent and the gouty diathesis present. He gives a list of the causes of cystitis, as classified by Guyon, who states that some cases, however, exist whose etiology it is impossible to determine. The two cases observed by Mabboux are as follows:

CASE I.—July, 1888. Mme. B., 38 years. Repeated attacks of cystitis; etiology obscure. Grandfather and father gouty; mother suffers from gall stones. As a general thing, enjoys good health; has a tendency to shortness of breath. Complexion blotched. Heart and lungs normal. Acid dyspepsia. Menstruation regular; no uterine derangement. Within the past eighteen months has had three violent attacks of cystitis, characterized by hypogastric pain, frequent and painful micturition; urine scanty, red, and burning.

Patient follows for twenty-one days a treatment consisting of the ingestion of weak mineral water, of baths and vaginal irrigation. The cystitis reappears in the month of August of the next year. Patient limps from a supposed sprain. Mabboux, upon examination, doubts the sprain and diagnoses an attack of gout, the idea then occurring to him that the cystitis is due to the same cause.

Vesical irritability is very great, but at the end of a week there is decided improvement. During the winter of 1889–1890 there is a slight return of the trouble, which disappears under the administration of the salicylate of soda. Patient considers herself cured and does not return to the baths of Contrexéville this year.

CASE II.—Mme. C., 48 years. Good health, except for frequent migraine. Father died of albuminuria after long suffering from gout. Has two children, the elder 25 years old. Suffers from migraine, and passes urine containing uric acid. Menopause four years before.

In 1888–1889 patient suffered from oppressive sensations without cough or fever; urine contained brick-dust deposit, and two attacks of nephritic colic resulted in the passing of reddish bodies the size of a millet seed. The last attack was in February. In May the patient was suddenly seized with suprapubic pain, frequent desire to micturate, and a sense of vesical fulness; urine red and burning. No lumbar pains; no gravel. Baths, emollient drinks, and opiated washings of the bladder for eight days cause a disappearance of the acute symptoms, but urine remains cloudy for two months.

In August patient takes the “cure” at Wildungen, which

gives relief to the vesical catarrh; but she suffers from pain in the left ankle, which is red and swollen; big toe of right foot red and sensitive for twenty-four hours. The following winter she suffers from asthma, and in the spring of 1890 the cystitis reappears. Patient comes to Contrexéville in July; has vesical catarrh, Heberden's nodules on the fingers, and small tophi on one ear.

Mabboux did not hesitate to diagnose gout, and the treatment was followed by prompt relief.

The author quotes from Barthez, Todd, Garrod, and Lecorché, in whose works upon gout may be found a reference to vesical gout. Guyon, while not admitting arthritism as a cause of cystitis, acknowledges to having met with cases of cystitis "evidently related to acute attacks of gout." As to its occurrence in the female, no arguments can be deduced from anatomy or physiology in contradiction of the fact. The influence of gout upon the other pelvic organs, especially the uterus, is undisputed. Why should the bladder be exempt from this influence?

The etiological diagnosis is certainly not easy, but may be reached by exclusion and the study of commemorative signs. There are a few symptoms which may indicate the nature of the trouble: the sudden onset, intensity of the suprapubic pain, and a sensation of fulness in the pelvis. Should the vesical symptoms follow an attack of articular pain, it will simplify the diagnosis. In the treatment of the acute stage, the salicylate of soda is to be preferred to colchicum. In a chronic condition of vesical catarrh, mineral waters are indicated; they should be feebly alkaline. The waters of Contrexéville, Martigny, and Vittel, which are sulphurous and contain calcium, are good; they render the alkaline urine acid, clear out the mucus and phosphates from the bladder, and counteract the gouty diathesis. The diet and habits of the patient should be carefully regulated; especial care should be exercised during the menstrual period, because of the intimate relations between the uterus and bladder in respect to circulation.

If the gouty diathesis be pronounced, salicylate of soda, or weak preparations of colchicum frequently administered, may be useful.

AIMÉE RAYMOND.

8. JACOB: CASES TREATED BY MASSAGE (*Bulletin de la Société Belge de Gynécologie et d'Obstétrique*).—Jacob reports on several cases of gynecological affections treated by massage, and comes to the following conclusions:

1. In cases of simple uterine prolapsus—that is to say, without complications on the part of the vagina or the annexes of the uterus—massage constitutes a means of rapid cure.

2. Massage will cure prolapsus of the ovaries.

3. Recent uterine displacements.
4. It will cause para- and perimetric exudates to rapidly disappear.
5. Chronic salpingitis is ameliorated.
6. Also chronic uterine affections, as metritis and endometritis.

G. P.

9. LORiot: SEPARATION OF THE CORD IN PREMATURE INFANTS (*Journ. des Sages-Femmes*, February 16th, 1891).—In the Soc. Obst. et Gynécologique de Paris, Lorient cites the case of an infant, born three weeks before term, whose umbilical cord did not fall off until about the sixteenth day. He quotes Charpentier as saying that ordinarily the cord falls off from the third to the fifth day, but in premature infants not until the sixteenth, seventeenth, and even the eighteenth day.

G. P.

10. DESGUIN, LÉON: EXTIRPATION OF THE RECTUM FOR CANCER BY THE VAGINA AND PERINEUM, WITH PRESERVATION OF THE SPHINCTER (*Gazette de Gyn.*, January 1st, 1891).—In certain appropriate cases, especially those in which the recto-vaginal wall is more or less involved and the anus remains intact, Dr. Desguin recommends this operation, which is performed in the dorsal position, with—

1. An incision of vaginal mucous membrane transversely in the superior cul-de-sac, as for a vaginal hysterectomy.

2. Two longitudinal incisions surrounding the vaginal perforation and joining toward the inferior third of the vagina to the left of the posterior column; from this point a parallel incision to the vulva, which is reached one and a half centimetres from the commissure.

3. The incision is continued on the skin surrounding the anus to a distance of two centimetres as far as the ano ischiatic line. This last incision is deepened, and the rectum disengaged laterally to the carcinomatous portion. The cut is made perpendicular to its axis, making use of portions of the vaginal incisions. The anus, which has been freed, is dilated by a large depressor, and the portion to be extirpated is dissected from its adhesions by the scissors both through the anal orifice and the lateral incisions. Sutures are introduced:

1. From the superior portion of the intestine to the anal end.
2. Continuous suture for the vagina without touching the peritoneum.
3. Some deep silver sutures for the perineum.

G. P.

11. DOLÉRIS, A.: VEGETATING TUMOR OF THE TUBULAR MUCOSA, OR PAPILLOMATOUS ENDOSALPINGITIS (*Nouvelles Arch. d'Obst. et de Gyn.*, January 25th, 1891).—Dr. Dolérís presents a very interesting case of a tubular papilloma which

he removed by a laparotomy. Before the fluid was withdrawn from it, it was about the size of a melon. The right tube was converted into a cyst with thickened walls, the internal surface of which was covered with arborescent vegetations; three-quarters of the cyst was lined with them. The structure of the vegetations was that habitually encountered in papillomatous growths.

The author calls attention to :

1. The rarity of this variety of tumor, of which, to his knowledge, there has not been one shown like it in France.

2. The clinical reality of the occurrence of a periodical hydrorrhea of tubular origin (the patient at intervals had a profuse, light rose-colored discharge, so profuse as to deluge everything when it occurred), although the uterine orifice of the tube seemed too small to permit a liquid the consistence of syrup, such as filled the tumor, to filter through. He goes on to state his belief in the possibility of evacuating the tubes by the uterus, even though the uterine orifice of the tube is so small naturally as only to admit of a bristle; under the pressure of the fluid the muscular structure of the tube dilates and permits of the evacuation, more or less quickly, of a fluid.

3. The vegetating nature of the tumor is not a proof of its malignity, and the structure of the epithelial layer (at certain points of the vegetations there were double and triple rows of superimposed epithelial cells) has no other significance than that to be attached to any excessive vegetation. The future alone will decide this point.

4. In spite of the failure of such a course of treatment in this instance as permanent dilatation, curetting and drainage of the uterus, that this course of intra-uterine therapeutics may be of use in many instances of tubular and tubular-ovarian disease should not be lost sight of.

GRACE PECKHAM.

12. SCHROEDER, RICHARD (Berlin): EXAMINATIONS IN REFERENCE TO THE CONSISTENCE OF THE BLOOD DURING PREGNANCY AND IN THE PUERPERIUM, AND THE COMPOSITION OF THE AMNIOTIC FLUID (*Archiv für Gynäkologie*, Band xxxix., Heft 2).—Nasse in 1836 made examinations of the blood of twenty-seven pregnancy cases, and at the end of twenty years had examined thirty-seven more. His results showed that the specific gravity is diminished, especially up to the eighth month, the fibrin is increased, there is a diminution of hemoglobin and a diminished number of red blood corpuscles, so that the condition during pregnancy is really one of chlorosis, and that this condition will explain many of the symptoms. Spiegelberg and Gscheidlein, on the other hand, found (experimenting on pregnant dogs) that the amount of blood was

increased during the last half of pregnancy; that the amount of hemoglobin is rather increased than diminished, and that the amount of water contained is only slightly increased, if at all. Cohnstein observed that the amount of hemoglobin is increased, but that there is a diminution in the number of red blood corpuscles (experimenting upon pregnant sheep). Fehling experimented upon pregnant women, and found that the hemoglobin was increased, as were the number of red blood corpuscles. He also examined the blood post partum, and found that in the majority of the cases (forty-seven out of eighty-three) the amount of hemoglobin was diminished, in ten it remained unchanged, and in twenty-six there was a slight increase. The greatest diminution (forty-one per cent) occurred in cases of placenta previa, due, of course, to the great loss of blood. Counting the red blood corpuscles showed three to four million to one cubic millimetre (minimum 2,330,000, maximum 4,750,000). After delivery a diminution of their number occurred. This would go to prove that a chloro-anemic condition is not a normal condition in pregnant women. For these experiments Fleischl's apparatus was employed.

Meyer made experiments in Berne, and they gave entirely different results from Fehling's. He showed, first, that in pregnant women during the latter months the number of red blood corpuscles and the hemoglobin are diminished; second, a short time after delivery the number of red blood corpuscles and the amount of hemoglobin are markedly diminished—this must be attributed to the loss of blood during labor; third, in the puerperal state an increase of red blood corpuscles and hemoglobin occurs, and this is sometimes greater at the end of the second week than it was during pregnancy.

Reinl, seeing that the two previous experimenters differed so materially, took up the subject, and his results corresponded quite closely with those of Fehling, namely, that there is no chloro-anemic condition normally existing during pregnancy.

In making his experiments S. employed two instruments—Fleischl's hemometer and Gowers' hemoglobinometer. The blood was obtained by pricking the finger of the patient with a needle and mixing it with distilled water. To count the number of red blood corpuscles, the *mélangeur* of Thoma-Zeiss was employed. The blood was mixed with ordinary salt solution. Two drops were always counted. Experiments were made upon forty-two cases, eight of these living in the hospital during pregnancy; the remainder did not enter until just before their delivery. Of these eight, three showed a small amount of increase of the hemoglobin, three a marked diminution in

the same, and two were chlorotic patients. In all but one case a diminution in the number of red blood corpuscles was observed. Of the thirty-four who lived out of the hospital, twenty-five showed an increase in the amount of hemoglobin, and only nine showed a diminution. From these results we must acknowledge that an increase in the amount of hemoglobin occurs three times as often as does a diminution, as shown by my experiments as well as those of Fehling and Reinl. As to the number of red blood corpuscles in these cases, in the nine there was a diminution corresponding to the diminution in the amount of hemoglobin. Of the twenty-five cases, in all but four there was an increase in the number of red blood corpuscles. These experiments were all made before delivery.

The blood was next examined two days after delivery, and in nearly all of the cases there was a diminution both in the amount of hemoglobin and the number of red blood corpuscles. This fact can probably be attributed to the blood lost during labor.

The third series of experiments were made upon the women from ten to twelve days after delivery. In twenty-five of the cases the amount of hemoglobin was increased, in eight it was diminished, and in four it remained unchanged. In twenty-two cases the number of red blood corpuscles was increased; in fifteen cases it was diminished.

Experiments were also made with reference to the relationship between the conditions of the amniotic fluid and the hemoglobin, with the following results: We must consider the amniotic fluid as a serous transudation from the maternal vessels, and this undergoes the same changes as does the blood during pregnancy. If the amount of hemoglobin is increased, then the amount of albumen in the amniotic fluid is also increased.

LEONARD S. RAU.

ITEM.

DR. ROBERT BARNES has retired from the active practice of his profession, and now resides at Lyss, Hants, coming in to London once a week for specially-appointed consultations at the residence of Dr. Fancourt Barnes, 7 Queen Anne street, Cavendish square, W.

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ORIGINAL COMMUNICATIONS.

AUTOMATIC MENSTRUAL GANGLIA—A NEW THEORY OF MENSTRUATION.¹

BY

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THE views contained in this paper are that menstruation is governed by nervous ganglia situated in the walls of the Fallopian tubes and uterus. I have designated these nervous structures as *automatic menstrual ganglia*. As a deduction of this theory, tubal motion and tubal changes will be considered the most marked phenomena of menstruation.

The question may be asked, What is a nervous ganglion? A nervous ganglion is a collection of nerve cells. Its constituents are nerve cells and nerve fibres. It is an ideal nervous centre having a central, conducting, and peripheral apparatus. A ganglion is a little brain, a physiological centre. It has the power of receiving sensation and transmitting motion. It is automatic in itself. It possesses the power of nourishment and controls recreation. Reflex action can be

¹ Read before the Gynecological Society of Chicago, June 19th, 1891.

demonstrated in it. What are called motor, sensory, and sympathetic nerve fibres are found in its composition. The peculiar feature of a nervous ganglion is rhythm. It performs cyclical movements. It has a periodic function which continually waxes to a maximum or wanes to a minimum. It lives a rhythmic life. Its periods of action vary from a few seconds to a month

1. *The proof of the existence of the ganglia in the tubes and uterus from analogy.*—All hollow viscera have ganglia in their walls. Histologists have long known that many viscera possess ganglia which have automatic power. The names of Bidder, Schmidt, Ludwig, Remak, Meissner, and Auerbach are associated with the discovery and description of these visceral ganglia.

(a) I have satisfied myself many a time, in vivisection on dogs and other animals, that the heart has nervous centres or ganglia, which will continue to act independently of their cerebro-spinal connection. It is not only clear that the heart has automatic ganglia, but that nearly all these ganglia are centred in the walls of the auricles. I have often watched the heart's action gradually die out from apex to base. We know by experiment that the heart will perform its cycle of contraction independently of its external connection. These automatic nervous ganglia situated in the wall of the heart keep up its rhythm, its cyclical action, its periodic movements. They explode oftener than once a second. I have severed the heart from its attachments in some animals and watched its beating cease, when, if left alone, it would be still forever; but by applying stimulus to the ganglia the heart would again perform its rhythm. It would beat and explode just the same as when it was connected to the cerebro-spinal system. Hence few observers doubt that the ganglia of Remak, Bidder, Ludwig, and Schmidt sustain and control the rhythm of the heart. One can prove by experiment that there are several ganglia situated in the auricle by cutting pieces out of its wall. If these pieces are stimulated they will go through a distinct rhythm.

(b) A large number of experiments on the intestines of animals (especially the dog) convinced me distinctly that the intestines are endowed with automatic ganglia in a similar

manner to the heart. These ganglia are called the plexus of Auerbach and the plexus of Meissner. If a dog is killed and the abdomen is opened in a room of 75° , the intestines can be induced to perform peristalsis for an hour after death by tapping them occasionally with a scalpel. As soon as the intestines are exposed to the air or tapped with the scalpel, they begin to go through wonderful vermicular movements resembling a moving bundle of angle-worms. I have often demonstrated the peristaltic movement of the intestines an hour after death, so that it can be stated that the automatic ganglia of the bowels will perform their rhythm independently of the cerebro spinal centre. I have found the intestines in autopsies invaginated, and from the non-congested and non-inflammatory condition of the gut wall I had no doubt the invagination occurred entirely after the patient's death. This non-inflammatory telescoping of the intestines in dying subjects is called the "invagination of death." It can be perfectly demonstrated in a dog's intestines fifteen to thirty minutes after he is dead. Hence the nervous bulbs studded over the plexus of Auerbach and the plexus of Meissner are the automatic ganglia which induce, sustain, and control the rhythm of the intestines. The vigorous rhythmic exercise or explosion of the intestinal ganglia is what causes colic, and in bowel obstruction occurring in patients having thin belly walls I have observed this with perfection. The intestinal rhythm caused by the ganglia can be beautifully seen in the defecating gut of a patient on whom colotomy has been performed. I have never seen the cause of the pain in angina pectoris very satisfactorily explained. I would suggest that it is colic of the heart, caused by abnormally vigorous action of the heart's automatic ganglia; that the desperate pain in angina pectoris is due to the excessive exercise or abnormally vigorous, irregular rhythm of the automatic ganglia situated at the base of the heart. Hence, clinically, no doubt, we see the abnormally vigorous rhythm or irregular rhythm of the heart in what is called neuralgia or spasm of the heart, or angina pectoris. The ganglia offer the best explanation. Clinically, we see in the intestines the exercise of Auerbach's and Meissner's ganglia in various diseases. In colic and bowel obstruction we see an excessively vigorous, irregular action of the

ganglia. We note an excessively irregular action of the ganglia in the desperate, painful colic of children, which I believe amounts in many cases to an invagination with subsequent spontaneous disinvagination. It may be noted that irregular action of the bowel ganglia occurs in children where the cerebrum is insufficiently developed to force the ganglia of Meissner and Auerbach into subjection and thus secure a regular rhythm of the gut. We also see irregular ganglionic action in the bowel where the cerebrum is diseased and hence has lost a controlling influence. In chronic constipation, and in the paralysis of the gut during peritonitis, we see disease of the ganglia producing such loss of power that the ganglia cannot initiate or sustain sufficient peristalsis to expel the bowel contents.

(c) The same statement can be made relative to the bladder. It is supplied with two kinds of nerves. One kind is the cerebro-spinal. The other kind is the sympathetic nerves, which especially go to the body and summit of the bladder. These nerves are studded over with ganglia which may be styled automatic vesicular ganglia. These ganglia are closely associated with the blood vessels and walls of the bladder, and have an influence in controlling the rhythm of this cyst. As an example to demonstrate the action of the automatic ganglia in the bladder, I took from a stag weighing fourteen hundred pounds the bladder, penis, and rectum. In twelve hours after it contracted quite small I then dilated it, and thirty-six hours after it had again contracted smaller than ever and would not contain half a pint of fluid. This bladder continued its rhythmic action for more than forty hours. It is not mere elasticity, as one can watch the rhythm of segments. It can be well demonstrated by injecting its blood vessels with red fluid and then watching it for a day, when the slow, cyclical rhythm can be plainly seen. The sacral spinal nerves preponderate at the neck of the bladder and endow it with sensation. They likely hinder it from rhythm, while the body and summit of the bladder are mainly supplied with sympathetic nerves. They give it blunt sensation and rhythm. But the summit and body of the bladder are the parts endowed with ganglia, and they are also the parts endowed with cyclical rhythm.

If a rubber bag is inserted into the bladder and then filled with fluid, having its external end connected with a mercury gauge, it can be plainly seen that the bladder undergoes intermittent contraction. It will demonstrate its rhythm. Clinically, this rhythm can often be observed in retention of urine. The filling bladder will periodically make vigorous efforts to expel its contents, and the pain felt at those times can be easily mistaken for colic. Hence the bladder is endowed with automatic ganglia, which are mainly situated in the walls of the body and summit, especially localized along its highways of nutrition (blood and lymph tracts). These ganglia preside over the rhythm of the bladder.

(d) The analogies of the heart, intestines, and bladder are quite apparent, and can reasonably be carried to the uterus and tubes. They are all hollow organs. The tubes and uterus are no exception to the other abdominal viscera. What is said in this paragraph is the result of examination of over seven hundred uteri, tubes, and ovaries, of woman, cow, pig, sheep, and dog. Some of the examination was carried on during the life of the animal, and in quite a number of cases I noticed the action of the tubes in living woman during operation. Much of the work was done on freshly butchered animals, where the organs were removed before the general muscular twitching had ceased. My first distinct attention was drawn to the idea that the heart, intestines, uterus, and tubes acted similarly by observation in the slaughter house. Dr. C. S. Miller and myself were watching the slaughter and evisceration of a cow weighing fifteen hundred pounds. The cow was in the eighth month of pregnancy. The butcher amputated the large uterus, containing the calf, a little above the internal os. I noticed that the amputated portion of the uterus containing the calf went through a peculiar series of rhythmic motions. But the interesting scene was the amputated stump left on the body of the cow. The stump was about six inches long and three inches thick. This stump performed its peculiar rhythm long after the cow was dead. It slowly described circles and arcs with diameters varying from an inch to four inches. Each muscular layer of that thick uterus worked in perfect harmony. No uterine layer of muscles interfered with any other. Every part of the

uterine stump seemed to work with intelligence or a kind of quasi-judgment during the rhythm. At one time the circular muscular layer would go through a slow but distinct rhythmic circle before any other muscular layer would begin. Then, gradually, the longitudinal muscular layer would begin to act, and the end of the stump would describe a rhythmic cycle, and thus it continued to repeat the rhythmic action until we left an hour after. During the activity of the stump the most striking example of the action of the two muscular layers of the uterus could be seen, for while one layer worked vigorously the other remained still. Another striking example to show that the hollow uterus has its own automatic ganglia may be observed by taking the uterus out of a cow immediately after death. The uterus should be that of a multiparous cow, because such have long, thick, tortuous, helicoid arteries. Now carefully inject the utero-ovarian arteries with red fluid. Observation will easily detect rhythm in the segments of this uterus for some forty hours after death, in a 75° room. The rhythmic waves that pass over the uterus will shift the fluid from one segment to another, so that the quantity of fluid is not uniform in each segment. The rhythm sometimes takes place very slowly. This phenomenon is not elasticity. But, clinically, the rhythm of the pregnant uterus has been known since the art of obstetrics began. My purpose here is simply to draw attention to the independent action of the uterus from a cerebro-spinal connection, and to show that the uterus has automatic ganglia like other hollow viscera.

Labor will take place under profound anesthesia. Children have been expelled from the uteri of dead women. All this is due to the nerve apparatus of the uterus. Some Frenchman severed the spinal cord of a pregnant sow below the brain, thus paralyzing all the voluntary muscles which aid in parturition, yet the sow had her pigs. The uterus drove one pig into the vagina, but as the abdominal muscles were paralyzed the pig had to be driven out by the second pig, which was pushed against the first by the contracting uterus.

(e) The Fallopian tube is simply a continuation of the muscular walls of the uterus, but not of the endometrium. The endometrium seems to be a temporary gland, whose

duration of active life is the menstrual period. The analogy of the hollow tube of the intestine or heart is very close. Nearly all the original work done on this subject was in relation to the tubes, for I consider them the most important organ in menstruation. The object of menstruation is to get an egg from the ovary to the interior of the uterus. This can be done by a properly prepared Fallopian tube. It seems to me that menstruation begins and ends in the tubes, and that the importance of the tubes overshadows all other organs in menstruation. When the tubes begin their rhythm the girl has arrived at puberty. Tubal motion is a sign of womanhood. When the tubes begin their cycles it is a heraldic sign that the gland called the endometrium is prepared to nourish an ovum. The endometric gland is no doubt often prepared to nourish an ovum before tubal motion or menstruation, and from the examination of nearly eight hundred ovaries I am fully satisfied that ovulation goes on from before birth until the end of life, or till the germinal epithelium is worn out. Actual observation of animals convinced me of that. One can see no changes in the ovary at puberty, except that of increased vascular supply. I never could find any periodicity, nor signs of it, in the ovulation of woman, cow, or sheep. The ovules simply ripen progressively and burst when they are mature, whether that be at menstruation or at some other time. I am sure they often burst by mere mechanical accident. Hence it does seem that menstruation and ovulation are two different processes. Two statements may then be made relative to an egg being carried into the uterus: First, when the tube goes through its menstrual rhythm it may secure an egg, if it happens to be ready and bursts. Second, the tube may secure an egg, if its fimbriated funnel becomes glued on to the ovary at a point where there is a maturing ovum.

2. *The proof of the existence of the ganglia in the tubes from direct observation and experiment.*—If a female dog is taken and well anesthetized, and her abdomen opened, the short white Fallopian tubes can be found just posterior to the kidney, at the abdominal end of the double uterus. Two important matters will be observed—first, the *condition* of the tube; second, the *position* of the tube. If the

animal is not in rut, which is very analogous to menstruation, the tubes will be very white, small, and still. They are very much contracted, and the fimbriated end generally lies as far from the ovary as the fimbria ovarica will permit. In short, in the interestruum time non-congestion and quiescence mark the tubal condition. The condition and position of the tube at the period of rut are wonderfully changed. The tube is very much swollen and elongated; it is dark blue from, especially, venous congestion. The surrounding blood vessels are enlarged, tortuous, and distended. The tube shows convolutions and tortuosities plainer now than at other times. The tube having become longer and thicker, its entire position is changed. The strip of (muscular) tissue which connects the fimbriated end of the tube to the ovary has shortened, and the funnel mouth of the Fallopian tube is closing on to some portion of the ovary. At the climax of the menstrual rhythm the fimbriated mouth of the tube is often glued or cemented on to the ovary by a kind of glairy exudate. The careful examination of nearly eight hundred tubes satisfactorily demonstrated to me that the tubes go through a distinct rhythm at menstruation. Menstruation is a periodic cycle of the tubes. The tubes go through a peristaltic or vermicular motion exactly analogous to the intestine. Now, there is only one kind of apparatus which produces a *rhythm*, and that is a ganglion. Hence the tubes go through a rhythm, and they must be influenced by a ganglion. The changes in the tube at puberty are as follows: (a) It assumes rhythmic movements. (b) Its muscular wall increases. (c) Its vascularity is much increased. (d) It straightens out and loses its corkscrew or spiral shape of fetal life. (e) Its epithelium becomes ciliated. (f) Its gross activity appears mainly at the abdominal end. The automatic menstrual ganglia during their rhythm produce such changes in the tube as will best prepare it to float an egg from the ovary to the uterus. As the rhythmic peristalsis of the tube reaches its climax the tube becomes thicker, longer, and its calibre wider. The fimbria ovarica shortens and draws a tubal funnel over a part of the ovary. The tubal walls become deeply congested, and the *lumen of the tube becomes filled with fluid, so that an egg can float through it.* A dry, contracted tube

with a narrow lumen offers difficulties for the passage of an ovum. If the epithelium of the tube is so altered by disease that it does not secrete fluid, the egg may not be able to float through the tubal canal, but may become arrested in its passage, causing ectopic pregnancy. The reason why an egg does not get into a child's uterus is because its tube is deficient in motion, the fluid in its interior and ciliated epithelium are deficient. The ciliated epithelium whips an egg into the uterus by means of a fluid medium. The rhythm of the tubes, caused by the ganglia, prepares them for their function. This is done by first drawing the mouth of the tube over a part of the ovary; and, second, by flooding the lumen of the tube with serous fluid. Of course it will be only accidentally that the mouth of the tube will cover a matured ovum. The vast majority ovulate into the peritoneal cavity. Ovulation is a whole life process, while menstruation, or rather tubal rhythm, lasts about thirty years. The almost entire separation of the tube from the ovary is peculiar to the higher animals, and no doubt lessens the chances of excessive reproduction. In the hen the ovary and oviduct are continuous. The active explosion of the automatic menstrual ganglia are the most marked at the abdominal end of the oviduct. By direct experiment it is easy to make the tubes perform their rhythmic, vermicular movements for half an hour after their removal from the living. The tubes of a *cow*, sheep, dog, or *pig* can be kept going in a warm medium by stimulating or pinching them, just in the same manner as pinching the heart or tapping the intestines will keep up the movements of those organs in vivisection. I have made this experiment many times on the normal tubes of woman where they were removed for various causes. While the operation is going on one can see the tubes going through a rhythm from mere manipulation. As soon as a woman's tube is removed, if it be normal, one can make it begin to form a rhythm by pinching it. The two muscular layers of the tube will work separately before the eye. The external longitudinal muscular layer shortens the tube, while the internal circular muscular layer narrows the tubal lumen. A woman's tube will keep up this rhythmic motion for about half an hour, if

pinched or stimulated in a medium (salt water is a very good medium).

The large range of movement of a woman's tube under stimulation is very marked, and the vigorous manner in which the two muscular layers of the tube work is very noticeable. If the circular layer is well stimulated, it will contract with such vigor as to resemble a pale, contracted band around the point of irritation. The endometrium may be looked on as a temporary gland, whose duration of life is the child-bearing period. So the automatic menstrual ganglia which govern the rhythm of the tubes and make fecundation possible are only temporary ganglia, at least so far as function goes. The automatic menstrual ganglia begin their functional life in the incipient tubal motion. This is not the only organ that acts merely at a definite period of life, though the organs exist anatomically during the whole of life. The thymus gland is largest at birth. The thyroid gland becomes most active in girls about 15. The sebaceous glands of males spring into functional activity at about 18. When the menstrual ganglia of woman begin to cease their functions forever, the sebaceous glands of her face assume an active function, and a beard results. The salivary glands do not act for three months after birth. No doubt the woman's facial sebaceous glands existed always, anatomically but not functionally. It has appeared to me for some time that there exists some relation between the testicles and sebaceous glands in the male, as there does between the automatic menstrual ganglia and sebaceous glands in the female.

Whether the rut of animals and the menstruation of woman are the same or different processes we will not discuss now. But the function of the ganglia and their actual rhythmic process would be precisely the same in either case. In mammals a tubal rhythm with its associated changes is almost a necessity to transport an ovum from ovary to uterus. I could not observe any difference between the state of the tube and the relation of its mouth to the ovary in animals in rut and the menstrual process of woman. The gross anatomy of both processes appeared identical.

Premenstrual Pain.—The pain immediately preceding menstruation is generally not well understood. I have ob-

served that many gynecologists of the present day attribute the premenstrual pain to the uterus. They say the pain is due to the mechanical obstruction to the menstrual fluid. These views may occasionally apply to cases. But we will hold that the main premenstrual pain is due to an excessive action of the tubes or a too vigorous rhythm of them. The automatic menstrual ganglia are overexcited and act irregularly. The excessive stimulation arises mainly from the fluid which finds its way into the lumen of the tube. The fluid in the lumen of the tube, arising out of its congested state, acts like a foreign body and excites tubal action. The ganglia become immoderately excited in tubes whose lumen is partially or wholly closed. The vigorous attempts of the tubes to expel the fluid confined in their lumen produce well-known agonizing pain. Time after time I have examined women with distended tubes, when the patients would repeatedly tell me that the pain excited by the examination would last for hours. The distended tubes were simply excited into peristalsis by irritation of their ganglia. Dyspareunia, so frequent in tubal disease, is not merely a story of pain at the time of connection, but of pain that endures for hours. Part of the pain is due to trauma of irritable nerves, but the worst pain is caused by setting in motion the vermicular action of the diseased tube. The confined fluid in the tubes excites them into peristalsis, just as irritating substances excite the intestine into painful peristalsis. If an intestine, through obstruction, cannot expel its irritating contents, the picture of pain is almost identical with premenstrual pain. In fact, I have often wondered whether I was dealing with intestinal or tubal colic. It must be remembered that muscle governed by sympathetic ganglia acts quite differently from muscle governed by spinal nerves. One is slow and rhythmic, while the other is rapid and more spasmodic.

Anatomical.—The distribution of the sympathetic nerve supply and the spinal nerve supply to the uterus and tubes strengthens the theory of automatic menstrual ganglia. Anatomists agree that the uterine sympathetic plexus branches off to supply the uterus and tubes above the point where the sacral spinal nerves join the sympathetic chain. The sympathetic plexus of nerves with its ganglia supplies the upper

portion (body and fundus) of the uterus and the whole of the tubes, while the sacral spinal nerves mainly go to the cervix. Now, it is very likely that the (sacral) spinal nerves have little to do with any rhythm or cyclical action. It is quite probable that they hinder rhythm. They would thus influence the cervix to live a steady life. The ganglia on the sympathetic uterine and tubal plexus, on the other hand, are possessed of a peculiar property called rhythm, so their ganglia would endow the uterus and tubes with rhythm. This agrees with the observation that the body and fundus of the uterus and the tubes are the main part of the genital tract involved in menstruation, while the cervix and vagina, mainly supplied with spinal nerves, remain fairly still. The cervix is a mere *guard* to the uterus, and does not share in menstruation. These ganglia mainly follow the blood vessels and the tortuous helicoid arteries supplying the uterus and tubes, and, being long, give much space for ganglia to exist. The ganglia no doubt control blood supply by regulating the calibre of the artery and the stay of the blood in the veins.

3. *The microscope, or sometimes a large lens*, will demonstrate the existence of the ganglia on the plexus of nerves going to the uterus and the tubes. The nerves show unevenness. At places they coalesce into masses, and the microscope demonstrates their ganglionic character. I have frequently been able to trace the nerves showing distinct bulbs on the posterior part of the uterus. Histologists have some time ago shown that little ganglia existed in the walls of the uteri of animals. But space forbids further discussion here. Every visceral organ has its own supply of sympathetic ganglia brought to it on the walls of the blood vessels. Each visceral organ requiring it has its own established cycle initiated in primordial life. The rhythm becomes strengthened by differentiation into special organs and repetition.

It seems to me that knowledge of the various visceral ganglia will render the function of those organs and their diseases more intelligible. To intelligibly minister to an organ diseased one must know its pathology. The treatment of any disease comprehends part if not all of its pathology. To me the action of the heart under varying states and pressure of the blood is more intelligible with some knowl-

edge of the automatic ganglia which control its rhythm and motion. A knowledge of the functions of the cardiac ganglia clears up many an obscure problem and explains the heart's action under varying conditions. The same may be said of the ganglia of Meissner and Auerbach in rendering intelligible intestinal peristalsis. So a study of what may be termed the automatic menstrual ganglia will perhaps throw more light on the action of the tubes and uterus—organs around which woman is built both mentally and physically. We suggest that the rhythmic function of the endometric gland, its nidation and denidation, should not be neglected as a part of menstruation; but space forbids discussion.

The ganglia in the uterus and tubes of woman generally induce a cycle once a month during their functional activity. The ganglia explode monthly. In the lower animals the automatic uterine and tubal ganglia explode in periods which correspond to the cycle of the rut. It is here concluded that whether rut and menstruation be the same or different processes, they are governed in their *rhythm* by the automatic uterine and tubal ganglia.

Will these automatic ganglia aid in explaining the function of the uterus, tubes, or ovary after surgical or other destructive procedures on any one of the three? I think they will. That menstruation is closely connected with the nervous system, and that, too, with the sympathetic as it has rhythm, is a common observation. Nerve disturbances disturb menstruation and its rhythm. A sprain in the wrist has checked menstruation. I know a patient who while menstruating became frightened by a whistle from a train and did not menstruate for a year. Sudden changes in temperature will alter its rhythm. The mere expectation of marriage will occasionally make its rhythm regular. Marriage, by mental and physical stimulation to the genital apparatus, will often induce regular menstruation. When the nervous system is impaired in strength by wasting disease, there may not be enough vital energy to induce and sustain menstrual rhythms. Tubercular girls cease to menstruate. It is a common observation that fat persons have weak resisting powers, and fat girls are notoriously irregular. In a precocious, abnormally developed girl we may see early menstrea-

ation. In pregnancy and nursing, menstruation is arrested because the nervous vitality is expended in nourishment. The miserable and painful failure of an infantile uterus in menstruation is rather from a deficient endometrium. If vital energies are directed into different channels, or vitality gets to a low ebb, the remaining powers may be insufficient to initiate and sustain the regular menstrual rhythm.

From the views entertained in this paper, that menstruation and ovulation are separate processes, and that the automatic ganglia are situated along the oviducts and uterus and probably closely related with the ovary, it would not be expected that removal of the ovaries would cause menstruation to cease suddenly. The automatic ganglia of the tubes and the uterus are still intact and will execute their rhythm. Many gynecologists give evidence that this agrees with natural facts. Ovaries are extirpated and tubal motion continues. However, the destruction of a part of a connected complex organ soon destroys the nice balance, and nourishment of the ganglia would in time deteriorate, and then insufficient nerve vitality with lack of ganglionic harmony would fail in starting and maintaining a menstrual rhythm. Extirpation of the tubes would quite effectually aid in arresting menstruation, though not entirely, as many ganglia would be left in the uterine wall. Yet in the very plan of the machinery the tube is no doubt designed to execute more motion than the uterus, which could perform its functions while remaining quite still. By the German gynecologists, during several years' residence abroad, I was informed that removal of the tubes in a vast majority of cases caused a rapid checking of menstruation. Mr. Lawson Tait writes that the total removal of the tubes arrests menstruation in ninety per cent of cases. Is it not strange that a tube cut off two inches from the uterus will maintain the rhythm? Actual cases prove that when only the diseased ovaries are removed from women, with inflammation existing in the tubes, they are but little helped in their misery. The active organ in menstruation is the tube, and it will execute its rhythm unless removed. Ligating the tubes is not a rational method, as it will not check the rhythm.

Finally, the tubes and most of the uterus being removed, menstruation will nearly always stop. The ovary, left without

a tube, would not sustain menstruation. Cases are reported where the tubes and ovaries and most of the uterus were removed, but menstruation continued. In such cases, no doubt, a sufficient number of automatic ganglia were left to start and sustain a menstrual rhythm. In such cases I suggest that investigation of total removal of the organs and also of the reality of continued menstruation should be carefully done. Patients often call any bleeding menstruation.

I wish to thank Dr. C. S. Miller, of Toledo, Ohio, who worked so long with me on this subject, and Dr. Christopher Martin, of Birmingham, England, who kindly aided me very much in the work.

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A REPORT UPON CERTAIN OPERATIONS DESIGNED TO PRESERVE THE UTERINE APPENDAGES.¹

BY

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I ASSUME that the larger number of workers in the field of uterine disorders agree upon the propriety of abdominal section when, in spite of the proper application of non-operative measures, a sufficient amount of disease persists in the uterine appendages to render the possessor a chronic invalid. The lesions presented in such cases may be roughly classed under certain headings, such as "hydro-salpinx," "hemato-salpinx," "chronic endosalpingitis and parenchymatous salpingitis" (chronic salpingitis and pyo-salpinx), "purulent and blood cysts of the ovary," and "pelvic abscess."

Ovarian tumors might be mentioned here, but as I am dealing with lesions commonly presented in conjunction with, or resulting from, peri-uterine inflammations, such tumors are not here referred to, nor do I refer to disease dependent upon tuberculosis or cancer.

Hydro-salpinx, no doubt one of the closing stages in a salpingitis, has generally associated with it a disseminated cystic

¹ A paper read before the Obstetric Section, American Medical Association, at Washington, May 6th, 1891.

degeneration of the ovary, which, taken with the condition of the tube, forbids the hope of a restoration of the function of the organs, save in such an imperfect manner as to render it rather a curse than a blessing. But even if the attempts at menstruation should be measurably painless, yet it is evident that beyond menstruation the organs cannot go, and this holds good for the remainder of the patient's life.

There is much reason to believe that a like statement may be made touching most cases of hemato-salpinx, although here the ovary is less likely to be irreparably diseased than in the former condition. Hemato-salpinx exists in two forms. One is no more than a tube, closed probably at the outer end, which contains menstrual blood; the closure arrests the current, and the blood forms, much as we find it in the stumps of tubes after salpingotomy. Ultimately the blood may be discharged into the uterus. There is no coagulation. Another form is that in which the tube contains a blood clot made up of concentric layers, the layers obviously the result of successive hemorrhages from the diseased membrane lining the tube. This clot may attain the size of the normal non-pregnant uterus, or be even larger, and can only be dissipated by a process of degeneration and absorption similar to that which pertains to such clots elsewhere. It is possible that this last condition is but a more advanced stage of the first mentioned, but when it has occurred there is abundant reason to assume that the tube is destroyed. An examination of a tube so filled will, I think, bear out this statement. But not so in the cases where you have merely the fluid, or, as I believe it to be, menstrual blood. Here the tube in the main is in a condition which permits us to believe that it may be restored.

The next condition is chronic salpingitis—a condition presenting various aspects. These may be classed as presenting the following features, more or less combined in many instances: endosalpingitis and parenchymatous salpingitis. In all there is an accumulation of mucoid or purulent fluid; in some the purulent accumulation is excessive, causing a dilatation of the tube, this dilatation equalling in extreme cases the dimensions of a distended intestine. This is the pyo-salpinx, or pus tube. Whenever the cavity of the tube is distended, the ends, especially those of the fimbriæ, are closed

by a prior inflammatory action. The so-called parenchymatous salpingitis is that form in which the walls of the tube are thickened, in some instances to such an extent as to encroach upon and almost close the cavity of the tube, even at the infundibulum. Peritoneal adhesions prevail in nearly every case of salpingitis, and yet in quite a number of instances of salpingitis—the parenchymatous forms—we find the fimbriated end of the tubes open, and it is to be presumed that the uterine end is likewise free.

Turning now to the ovaries, we find that they present the following changes: enlarged from prolonged congestions; disseminated cystic degeneration (this does not refer to the small, pearl-like bodies confined to the surface of the organ, which appear to be harmless); one or two cysts, involving a third or even one-half of an ovary; and, lastly, cysts containing pus or blood. The cysts containing blood are the hematomata of the ovary, not corpora lutea.

I do not make any apology for this condensed statement of the conditions met with in chronic inflammatory disorders of the appendages, because I intend using it only as a groundwork for the suggestions I now propose to offer touching the conservative management of them.

It is idle to suppose that, with our present means of diagnosis (including the aspirator), the conditions presented in chronic diseases of the appendages can be differentiated short of an exploratory incision. A single fact, which has no doubt been observed by many of you, substantiates this statement. I refer to cases in which upon removal the ovaries are found to contain pus, and yet, for months prior to the operation, no symptoms pointing to distinct purulent accumulation have been present. The problem, then, as to the contents of the diseased tube or ovary, short of an exploratory incision, is unanswerable in many instances. I am therefore prepared to maintain that every case of chronic disease of the appendages which has resisted non-operative treatment for a reasonable length of time, and in which the symptoms are such as to indicate danger to the patient's life, or even render her a chronic invalid, demands an exploratory incision—this being, as I understand it, the broadest application of the procedure known as the "exploratory incision." The

incision having been made, the questions which will be presented are those that I propose bringing to your attention to-day.

What are we to do after we have exposed the diseased appendages?

In the New York *Medical Record* of September 18th, 1886, I published a paper in which, while writing of the treatment of the different forms of salpingitis, I said: "It behooves us to be slow in laying operative hands upon these tubes in acute salpingitis, never unless it be to cut short a peritonitis that threatens to become general; but in chronic cases, whenever other measures have been *faithfully* tried and found wanting, every patient should be offered that measure of relief that surely can be gotten from abdominal section.

"In the interest of conservatism, let us hope that this will not always mean extirpation of the tubes and ovaries, for who can say that the abdominal surgeon may not devise means by which those organs may be so treated as to secure health without always robbing of the possibilities of maternity? Some recent work of my own in that direction encourages me to think that this may yet be an accomplished fact."

In compliance with the suggestion contained in this last paragraph, I presented in 1887 to the New York Obstetrical Society a report of four cases of chronic salpingitis with adhesions, which were treated merely by separating the uterus and the appendages from the structure to which they had become attached (see AMERICAN JOURNAL OF OBSTETRICS, vol. xx., page 630). This paper was followed by another, upon the same subject, in September of the same year; four cases were then reported, making in all eight (see Transactions American Gynecological Society, 1887).

The gist of the contention in these papers was to the effect that chronic salpingitis did not in all cases demand removal of the appendages, even though laparotomy might be called for. In furtherance of this same idea I now present forty-two additional cases, each one representing some one of the methods of "conservation" aimed at. These cases have been classified and arranged under six headings.

Class A represents those cases in which the tubes were operated upon without amputating, in order to render them patent at the outer end.

Class B represents cases in which the infundibulum was amputated, the ovary remaining.

Class C represents cases in which the tubes and ovaries were simply freed from imprisoning adhesions.

Class D represents cases in which the principle of "exploratory incision" was applied to the ovaries.

Class E represents cases in which the ovaries, enlarged from prolonged congestion due to misplacement, were treated by suspension.

Class F represents cases in which ovaries affected with one, two, or even three cysts, were treated by enucleation of the cysts.

CLASS A.

	GOOD.	BAD.	UNKNOWN.
1. M. S.....	..	1	..
2. A. D. (died).....	.	..	1
3. A. B. (died).....	..	..	1
4. M. K.....	1	..	..
5. V. K.....	1	..	..
6. M. G.....	1	..	..
Total.....	3	1	2

CLASS B.

	GOOD.	BAD.	UNKNOWN.
1. D. M.....	..	..	1
2. A. R.	1	..	..
3. K. B.....	1	..	..
4. S. B.....	1	..	..
Total.....	3	..	1

CLASS C.

	GOOD.	BAD.	UNKNOWN.
1. C. B.....	..	1	..
2. R.....	1	..	..
3. F. L.....	1	..	..
4. M. K.....	1	..	..
5. E. R. (1 preg.).....	1	..	..
6. R. L.....	1	..	..
7. R.	1	..	..
8. R.	1	..	..
9. A. B.....	..	1	..
10. K. M.....	1	..	..
11. W.....	1	..	..
12. M. D.....	1	..	..
13. E. M.....	1	..	..
14. H. M. (2 preg.).....	..	1	..

CLASS C (CONTINUED).

	GOOD.	BAD.	UNKNOWN.
15. H. K.....	1	..	..
16. E. H.....	..	..	1
17. W.....	..	1	..
18. C. (1 preg.).....	1	..	..
19. A. R.....	1	..	..
Total.....	14	4	1

CLASS D.

	GOOD.	BAD.	UNKNOWN.
1. E. G.	1	..	..
2. M. L.....	1	..	..
3. C. H.....	1	..	..
Total.....	3	..	..

CLASS E.

	GOOD.	BAD.	UNKNOWN.
1. C. B.....	1	..	..
2. J. D.	1	..	..
3. T.....	1	..	..
4. M. C	1	..	..
Total.....	4	..	..

CLASS F.

	GOOD.	BAD.	UNKNOWN.
1. C. J.....	..	1	..
2. D. L.....	..	..	1
3. B. M.....	1	..	..
4. M. W.....	1	..	..
5. J. P.....	1	..	..
6. C. K.....	1	..	..
Total.....	4	1	1

TOTAL.

	GOOD.	BAD.	UNKNOWN.
<i>Class A</i>	3	1	2
" <i>B</i>	3	..	1
" <i>C</i>	14	4	1
" <i>D</i>	3	..	..
" <i>E</i>	4	..	..
" <i>F</i>	4	1	1
Total.....	31	6	5

Already reported, eight (see AMERICAN JOURNAL OF OBSTETRICS, vol. xx., page 630, and Transactions of American Gynecological Society for 1887). Of these eight all re-

covered from the operation, and but one has reported an unfavorable result.

Recapitulating the results in the fifty cases, it is found that forty-eight made good recoveries from the operation, and that two died.

As to the therapeutic results of the operations, thirty-eight have made favorable reports. In seven it was bad, and in five it could not be ascertained, completing the report upon the fifty cases to date.

In reviewing these results it is proper to call attention to the fact that the mortality of the procedures compares favorably with the best that has been obtained in total extirpation of the appendages. This becomes all the more evident when I state that one of the two deaths was in all probability dependent much more upon my lack of judgment than upon any inherent defect in the procedure adopted.

Reverting to the cases set down in the table of results as "bad," a few words as to the peculiarities of each may prove instructive. (Mention of the case of failure in the original eight has already been made; see Transactions American Gynecological Society, 1887.)

CASE I., *Class A*.—Here the operation was essentially faulty in principle. The ends of the tubes, owing to the action of the drainage tubes, were soon covered with granulation tissue, and in consequence speedily closed. Menstrual blood accumulated in each, producing hemato-salpinx. Great pain together with persistent metrorrhagia resulted, necessitating finally the removal of the appendages. Amputation of the dilated ends of the tubes might have sufficed, but at that date it had not suggested itself to me.

CASE I., *Class C*.—Here we have a distinct demonstration of the now recognized fact that extirpation of the appendages, no matter how thoroughly done, will sometimes fail to relieve a patient. This circumstance is, therefore, presented for your consideration; and it should be carefully weighed, because it seems to show that there are enough therapeutic failures in amputation of the appendages to warrant an acceptance of some proportion of like failures in these attempts at conservatism, without invalidating their claim to a place among our resources.

CASE IX., *Class C*.—This patient, after having the uterus and appendages freed from the adhesions, was treated by hysterorrhaphy to keep the structures in the normal position. The sutures did not maintain their position, however, so that the organs dropped back as before, in retroversion and prolapse.

CASE XIV., *Class C*.—The ultimate results for a period of some sixteen months were all that could be wished for, because during this period two pregnancies occurred, the first resulting in a living child, the second only terminating as a result of criminal interference. This operation was the cause of the salpingitis and peritonitis which destroyed the appendages I had allowed to remain. It would seem, then, that the placing of this case among the "bad" results is not wholly warranted.

CASE XVII., *Class C*, proved abortive because of the subsequent growth of cysts in the ovaries, chiefly in the right. Had the cysts been enucleated in the first operation, as they might easily have been, there is reason to believe that the result would have been good.

CASE I., *Class F*.—This case has already been reported in THE AMERICAN JOURNAL OF OBSTETRICS (Transactions of the New York Obstetrical Society) for 1890, as one showing that enucleation of a cyst does not harm an ovary. The cyst was removed, and the opening left in the organ was closed with silk sutures. At the same operation hysterorrhaphy was performed. In passing the sutures both were placed too near the Fallopian tubes, so that when some inflammation occurred around these sutures the tubes became involved and were closed. This was discovered some months after the operation, when the abdomen was again opened in order to see what caused the severe pain from which the patient continued to suffer. The tubes had been so much damaged, all the appendages were removed. It was then seen that the enucleation practised upon one of the ovaries in the first instance had proved a success, as the organ was in excellent condition, but few remnants of the silk used upon it remaining. This case would then appear to be one whose position in the column of bad results is open to some question.

It will be noticed that the only two cases that died are

placed in the "unknown" column. This has been done because, owing to the *immediate* bad result, no *ultimate* therapeutic result was obtainable.

Deducting these twelve cases (seven bad and five unknown), thirty-eight of the whole series remain. All of these have been seen and examined after not less than one regular menstrual epoch subsequent to the operation, and thirty at periods ranging from six months to three years after the operation.

Three of these cases became pregnant, one of them twice—two living children were born—and there were two miscarriages, one of the miscarriages depending upon a severe fall, the other having been induced criminally.

A comparison of the results in the different groups is interesting, but, owing to the essential differences of the procedure in each, it is not specially instructive as yet. More time must elapse before sound deductions can be drawn in that direction.

I will now present a case which does not belong to this series, and which may seem out of place, but it is given for two reasons. It shows that we may have a raw surface, such as is presented by a stump after removal of the appendages, as it is usually performed, which not only escapes adhesions, but which becomes covered by a tissue to all intents identical with the peritoneum. And, again, it bears testimony to the virility of ovarian tissue, for we have here an instance of a segment of an ovary, no doubt lying outside of a ligature (this must have been the case, judging from Dr. Coe's statement; see the history), which was rehabilitated and continued to perform its function, as proven by the presence in it of a recent corpus luteum. The bearing of the two facts thus observed upon questions suggested by this paper is self-evident, and sufficient excuse for bringing in the report.

CASE.—L. C., age 28, married, United States, housewife. Admitted February 14th, 1891.

Menstruation began at 15 years. Regular until two months ago. Some pain during flow. It lasts eight days. Loss of blood is profuse. Last menstruation was in November.

Leucorrhœa.—Had a very slight leucorrhœa for a few days two years ago, just before she was operated on.

Family History.—Mother died when 50 years of age from cancer of the womb. Father died of consumption at 52.

Previous History.—Before marriage suffered from palpitation of the heart. Never had any uterine trouble before marriage. Has been married eleven years. Five children; number living, two. First child premature and did not live. Last child five years ago. Just before the first child was born she had a fall, striking her abdomen. The child was born soon after. From that time and until two years ago she suffered from constant and severe pain in both inguinal regions, in the suprapubic region and back. This caused her so much trouble that, at the advice of her physician, she consented to undergo an operation. This was performed by Dr. H. C. Coe two years ago last January. In answer to a letter of inquiry, Dr. Coe said that he removed a typical double pyosalpinx. So far as he could see, both ovaries were also removed. There were firm adhesions. Irrigation, drainage. Non-febrile convalescence. After the operation the patient was free from pain until she began to again take up her household duties. It then began to come back, and she has had it ever since.

Present History.—Present trouble began about a week after she returned home after her operation two years ago. She suffers from pain in the suprapubic region, left side, and back. There is some slight pain on the right side also, but it is not as bad. The pain is constant, increased by walking, bending over, or any motion. It has grown steadily worse up to date. She also suffers from severe headaches. Menstruation has been regular since her operation, and the patient says it is just the same as before. Bowels are very constipated, and defecation is accompanied by considerable pain. Has no pain in passing urine, but for some time after passing it suffers from intense bearing down pains. Urine 1.024, acid, amber, normal; microscopical examination negative.

On Admission, temperature 99.2°, pulse 98, respiration 22.

Diagnosis.—Chronic peritonitis on left side.

Physical Signs.—A mass about the size of a walnut can be felt on the left side close to the cornu of the uterus.

Operation.—By Dr. Polk, February 23d, 1891, at clinic.

Operator made an incision two and one-half inches long in the median line close beside the old cicatrix. There was considerable hemorrhage, but this was controlled by means of artery clamps. As soon as the peritoneum was opened, operator introduced two fingers into the abdominal cavity. On examination, by touch and vision, the stump of each tube was found to be about one inch in length.

The right stump was perfectly free from adhesions, and covered with peritoneum which had become translucent and was in all respects similar to surrounding peritoneum. This stump was free from all ovarian tissue.

The left stump contained a piece of ovary about the size of the last phalanx of one's middle finger. The mass was covered by adherent omentum. Both tubes were undilated. Operator removed the remainder of the left ovary and all of the tube close to the cornu of the uterus. The ovary was found to contain a recently ruptured Graafian follicle.

The specimen was sent to the laboratory for examination, and the report of examination was that there was no trace of the ligature, and the tissue was normal ovarian tissue.

Discharged cured March 17th, 1891.

It is more than probable that this paper will suggest to you a similarity between some of the results arrived at in the procedures mentioned and those sought after in the Schultze and Brandt methods of treating some of the conditions here presented. If time permitted, I might enter upon a consideration of the relative merits of each. For the present we can only say that it is a question first of mortality, next of results. My own impression is that in results these procedures will ultimately be found superior; as to mortality I am not prepared to express an opinion.

In closing this paper, I beg to suggest that, as there are so many questions involved, a wide discussion might be provoked and thus the essential points might be smothered. To avoid this I ask permission to suggest the salient propositions:

1. In cases of chronic disease of the appendages the incisions should be in the nature of "exploratory incisions."

2. The question of removal should be in the main left for determination after the organs have been exposed.

3. That the condition of the ovary should be the chief factor in determining the question of procedure.

4. That, *if need be, this may* be determined by exploratory incision of the ovary.

5. That if the ovary contains pus, it and the associated tube should be removed, it being the rule that whenever an ovary is removed the tube must accompany it.

6. That if the tube contains pus, the ovary being free from pus or disseminated cystic degeneration, the operator is at liberty to recommend either the removal of both organs or else the partial amputation of the tube, leaving the ovary; and that the same rule apply in cases of hydro-salpinx and hemato-salpinx.

7. That cysts of the ovary do not indicate removal, provided they are not general throughout the organ and can be enucleated—hematoma of the ovary a possible exception.

8. Ovaries enlarged from congestion, as in misplacements, need not be removed.

9. Tubes with open infundibula, even though adherent and affected with parenchymatous inflammation and endosalpingitis, do not demand removal, excepting when one opens into a pus cavity.

10. A tube whose outer end is closed may be opened, cleansed, and its inner and outer coats coaptated, and then be returned to the abdominal cavity, provided it does not contain pus and possibly old blood.

11. Adhesions do not demand the removal of the tubes and ovaries, unless they be so dense that in breaking them the appendages are seriously injured. This presupposes that the appendages in themselves are not sufficiently diseased to demand removal.

APPENDIX.

I submit the following abstracts of reports as examples of the conditions treated and of the methods adopted. To present all the histories (in full) of the forty-two cases would extend the paper beyond proper limits. Therefore I have selected typical cases from each class, and have condensed the reports as much as possible, in order that the salients in each might readily appear. Of the whole series,

forty-eight were treated in Bellevue Hospital, one in St. Luke's Hospital, and one at her own home (Case XI., Class C).

CLASS A.

CASE I.—M. S., æt. 21, married, United States, house-keeper. Admitted February 2d, 1887. Married three years ago. One pregnancy only, which ended at term two years ago. Health good until October last, when she was treated for a gonorrhea. This passed through successive stages while under treatment at the College Dispensary, until it ended, a month ago, in salpingitis and pelvic peritonitis.

Upon admission somewhat anemic. Suffers from pain and soreness in back and pelvic regions. Physical examination revealed a mass of exudation about the sides and behind the uterus. This organ fixed and tender on pressure.

The abdomen was opened on March 9th, 1887. Double pyo-salpinx was found. The ovaries were healthy, but, together with the tubes, were bound down by recent adhesions. The appendages were freed, and the tubes, opened at the fimbriated extremities, were then washed out with one to five thousand solution of bichloride of mercury. The open ends were then stitched to the incision, small rubber drainage tubes were fastened in the tubes, and a glass drain was placed in the abdominal cavity. Upon the sixth day all the drainage tubes were removed. Under cocaine the attachment of the tubes to the abdominal walls was severed, and the outer wound was then allowed to heal by granulation. The patient made a good recovery, and was discharged in excellent condition April 15th.

Readmitted June 14th. The history of the case showed constant pain in the abdomen upon both sides of the incision. This came on soon after leaving the hospital, at the recurrence of her menstrual flow. This flow had been greatly prolonged and was excessive. The chief complaint, however, was the pain. June 17th the abdomen was opened the second time. The tubes were adherent to the anterior abdominal wall; they were closed and contained a small amount of bloody fluid. They were slightly dilated, but the walls were in good condition, in fact much improved as compared

with their state at the first operation. All the appendages were removed.

The subsequent condition of the patient was much improved as regards the pain, but the bleeding from the uterus continued to be excessive. This was finally arrested by the application of gauze drains to the uterine cavity. Final condition very good.

CASE II.—A. D., æt. 24, married, United States, house-keeper. Admitted February 12th, 1887. During past eight years patient has had ten abortions, occurring between the second and third months; known causes indefinite. Says she never attempted to produce an abortion, being very anxious to have a living child. During this time she enjoyed comparatively good health until one year ago, when she had a miscarriage followed by pelvic peritonitis. Two months later she had pneumonia, and some time afterward was sick and the doctor told her she had ovaritis. After this she was well for about three months.

In December, 1886, she had her last miscarriage, after which she suffered considerably from pain in the hypogastric region and extending across her hips.

Courses began at the age of 12, since which time she has menstruated every three weeks. Menses last eight or nine days, and she loses considerable blood. Family history good. Patient denies any gonorrheal infection.

On Admission.—Patient in excellent physical condition. Suffers some pain in back and lower part of abdomen. Last menstruation two weeks ago. Says she is troubled with frequent and painful micturition. Temperature and pulse normal.

Examination.—All the left side of pelvis filled in with induration extending downward along vaginal wall. Fundus of uterus felt as a movable mass a little above and to the front of the cervix. Uterus anteflexed and fairly movable. Canal of normal length. Mass felt to left of cervix supposed to be a dilated tube.

March 2d. Patient developed a marked attack of pleurisy on the left side. Treated with poultices and anodynes.

March 6th. Signs of pleurisy gone.

March 14th. Patient menstruating.

March 15th. Urine normal. Taken to Marquand Operating Room. Dr. Polk's instruments used. Operator, Dr. Polk. Incision two and a half inches long made in median line, beginning two inches below umbilicus. Peritoneal cavity opened. Examination showed both Fallopian tubes enlarged, the left being larger than the right, and both containing pus. Both ovaries in normal condition. A small purulent cyst was found in the broad ligament just below the left ovary. The right tube was drawn out of the incision and punctured at its fimbriated extremity, its interior thoroughly washed out with hot water. The lining mucous membrane was now stitched to the peritoneum surrounding the tube, to prevent occlusion of the opening in the fimbriated extremity. After again thoroughly washing out the tube, it was dropped back into its normal position. The right Fallopian tube was treated in the same manner. While this tube was being manipulated the small cyst in the broad ligament was ruptured and its contents escaped into the peritoneal cavity, which was instantly washed out with hot water. A Sims drainage tube was then placed in position and the external wound sutured with floss silk. Combined antiseptic dressings applied. Patient came out of ether well, but pulse was very rapid both before and during operation. Patient began to fail immediately after coming out of ether, suffering severely from shock. Died March 15th.

CASE IV.—M. K., æt. 18, Russia. Admitted November 11th, 1889.

Symptoms and Signs.—Leucorrhea and pain in the hypogastric, right inguinal, and lumbar regions for past three months. Pain is sharp and paroxysmal in character. Vaginal discharge purulent and fetid.

Examination.—Uterus enlarged, sensitive, and fixed. Sensitive masses in both lateral fossæ of Douglas.

Operation November 25th, 1889.—Median incision, two inches long. Right Fallopian tube adherent, but otherwise healthy. It was freed from the adhesions. Left tube also adherent, inflamed, and the fimbriated extremity closed. The adhesions were relieved, and the fimbriated extremity slit up a distance of four-fifths of an inch. The mucous lining of the tube was stitched to the serous covering, and allowed to

remain high up in the pelvis. Discharged January 14th, 1890. Result very good.

CASE V.—V. K., æt. 27, Poland. Admitted November 7th, 1890.

Symptoms and Signs.—Owing to unfamiliarity with the language spoken, no history taken.

Examination.—Uterus fixed. Masses on both sides in region of broad ligaments.

Operation December 1st, 1890.—Right tube and ovary bound down by adhesions. Fimbriated extremity of tube firmly adherent to ovary and vermiform appendix. Adhesions were separated, the tube was slit at its distal extremity and washed out. The mucous lining of the tube and its peritoneal covering were stitched together at the artificial opening. The left tube and ovary were enlarged and firmly adherent; they were therefore removed. Two months after operation, uterus movable, no masses in pelvis. In good condition; was therefore discharged.

CLASS B.

CASE I.—D. M., æt. 24, Ireland, married, seamstress. Admitted September 19th, 1890. Menstruation began at 18; has been regular and painless. Has been married for three years. One pregnancy only. This terminated in a miscarriage at seven months one year ago. Made a good recovery, and remained well until four months ago, when menstruation ceased for two months; then had a profuse menstrual flow, which was, no doubt, an abortion, although the patient is not clear on that point. Since this flow, has suffered constantly from pain in the back and in the left ovarian region.

Four weeks ago the menstrual flow again appeared. It was profuse and accompanied by an increase of the pain in the back and that in the left ovarian region. This discomfort has continued up to date, and has become so annoying as to incapacitate her for work.

Physical Examination.—All the organs are in normal condition, except the uterus and its appendages. The uterus is retroverted and fixed at the floor of the pelvis. Upon both sides are hard and tender masses, the larger being upon the left. These masses correspond to the position of the appen-

dages. The mass upon the left extends into the corresponding half of Douglass' cul-de-sac. The diagnosis made is: "Retroverted and adherent uterus, with chronic salpingitis, periovaritis, and peritonitis."

Treatment.—Abdominal section was made on September 29th, 1890. The left tube and ovary were found embedded in a mass of peritoneal adhesions. When freed the tube was found to contain about half a drachm of pus. The ovary was enlarged, softened, and it contained several small cysts filled with an opaque, milky fluid. Tubes and ovary were removed. The right appendages were fixed by peritoneal adhesions. When freed the ovary was in good condition. The uterus contained about half a drachm of pus. All the dilated portion was cut away, leaving about an inch of that part next the uterus. A suture was so passed in the tissue between the free end of the tube and the ovary as to approximate the two. This suture controlled the bleeding from the cut end of the tube. The uterus had already been freed from its abnormal position, and the shortening of the upper border of the broad ligament, caused by the removal of the left appendages, being sufficient to give it a good position, nothing further in that direction was done. The right appendages were sutured to the abdomen and the wound closed. The patient made an excellent recovery, and on October 30th was discharged in good condition, able to menstruate. The uterus was freely movable and in good position.

CASE II.—A. R., admitted October 19th, 1890, æt. 22. Married three years. Housework. Two pregnancies, both aborted at third month; the last was one year ago.

With the exception of sick headaches, health good until July last, when she began to have a profuse and bad-smelling leucorrhœal discharge. This was soon followed by pelvic pain and backache. This pain has grown steadily worse, and is aggravated by effort and by coition. Menstruation moderately painful and profuse.

Present Symptoms.—Pelvic pain; general nervousness, the patient being of a neurasthenic type.

Physical Examination shows that the uterus is pushed forward, and that it is fixed; behind and to the left of the organ there is a large and sensitive mass filling the whole

left posterior half of the pelvis and encroaching upon Douglas' cul-de-sac. On the right side there is a smaller, sensitive mass. Both masses are continuous with the uterus.

Abdominal Section was done October 25th, 1890. The right ovary was found to be the seat of an extensive hematoma; both it and the corresponding tube were removed. On the left side the ovary was normal, but the tube was the seat of a hemato-salpinx. The tube was cut off just inside the dilated portion, about an inch from the uterus, and its end attached close to the ovary. Adhesions were extensive on both sides. Drainage.

Six months after operation the patient's menstruation normal. No pelvic pain, except after great exertion; it soon ceases, however, and causes her but little annoyance. General health is much improved, although the headaches continue. Position of uterus normal, normal in size and in its mobility. No pelvic tenderness. Ovary on the left recognized, as the patient is thin; but it is of about normal size. Pelvis free from masses.

CASE III.—K. B., æt. 28, housework, Italy. Admitted October 28th, 1890. Married eleven years. Two pregnancies, one ten, the other three and a half years ago. Both went to term. Present illness began after the last confinement (three and a half years ago). It consists principally of constant and increasing pelvic pain referred to the left side; it is aggravated by any effort. For four months past has had profuse menstruation, amounting at times almost to a metrorrhagia.

Present Symptoms.—Pelvic pain, weakness from excessive blood loss.

Physical Examination.—Organs healthy, except the uterus; this is fixed and pushed forward. Upon each side are sensitive masses, which, filling the lateral fossæ of Douglas, encroach upon the cul-de-sac; that upon the left side is the larger.

Abdominal Section was done December 3d, 1890. The appendages were adherent throughout. The ovaries were somewhat enlarged and contained a few cysts; these were opened and enucleated. Hemato-salpinx was found on both sides; they were cut off about an inch from the uterus, and were attached close to the ovary. Drainage.

Six months after the operation, general health good; able

to attend to her duties; menstrual flow normal in amount. Some pain at menstruation, but not severe enough to annoy her more than a few hours. Uterus normal in all respects. No pelvic tenderness. No masses.

CASE IV.—S. B., æt. 34, German. Admitted December 4th, 1890. Occupation, housework. Married five months. No pregnancies. All the organs, except the uterus and appendages, normal.

Symptoms.—Pelvic pain for three years, mainly on the left side, increased by work and at menstruation. During the last four months has had prolonged and profuse menstruation.

Physical Examination of Pelvis.—Uterus fixed; a hard, sensitive mass on either side in the region of the appendages, each mass apparently about as large as a hen's egg.

Abdominal Section December 8th.—The right side of the pelvis contained a pyo-salpinx and an extensive "hematoma ovarii." These appendages were removed. The left side of the pelvis contained a pyo-salpinx and a normal ovary. Here as well as upon the right side the appendages were adherent to adjacent structures. The left tube was cut off at the point where the dilatation ceased, and its open end secured close to the ovary. The organs were then returned and the abdomen was closed. Drainage.

Result.—Four months after operation, free from pain, able to work. Menstruation profuse for two months; now normal. Uterus movable. No masses in pelvis.

CLASS C.

CASE I.—C. B., æt. 21, United States, bookkeeper. Admitted October 10th, 1888. Has had pelvic pain for several months. Took a prolonged bath in the sea on September 28th last while menstruating. That night had severe pelvic pain, followed by swelling of the abdomen. Has suffered continuously up to date.

Examination shows her to be suffering from pelvic peritonitis. The uterus is very painful to pressure, while all about its lower, lateral, and posterior regions there is a boggy sensation. Pulse and temperature show mild constitutional disturbance.

Under treatment improved; but, as the pain in pelvis per-

sisted, particularly when menstruating, she sought an operation.

Physical Examination showed, on December 1st, that the uterus was movable, but tenderness persisted. The tissues about the uterus appeared free of exudation, except upon the left side high up. This was supposed to be the inflamed tube and ovary.

December 3d, 1888, the abdomen was opened, and the appendages were found adherent on both sides. On the left the ovary was much enlarged and fluctuating, and the end of the tube was closed. Both were removed. Upon the right the appendages, after being freed from some slight adhesions, were found to be in good condition. They were therefore replaced. While in the hospital subsequent to the operation this woman seemed improved very much, but she still felt pain upon the right side. This increased so much that about one year later Dr. Coe removed the appendages upon that side, finding them diseased. Still she had pain and excessive menstrual flow. One year later, two years after the first operation, Dr. Coe opened the abdomen again and found that the stumps of the tubes upon both sides showed dilatation, which accounted, as we supposed, for the continuance of the suffering. Both dilatations were carefully removed at the cornua; yet, when seen six months after by me (the writer), her pelvic symptoms were practically the same as after Dr. Coe's first operation, and worse than they had been before any operation.

CASE X.—K. M., æt. 22, Canada, married. Admitted April 19th, 1889.

Symptoms and Signs.—Dysmenorrhea and menorrhagia. Pain in both inguinal regions; constant weight and aching, increased during defecation and coition. Urine normal. Symptoms became severe after miscarriage seven months ago. Constant headache. Cardiac palpitation and occasional syncope.

Examination.—Uterus enlarged and sensitive, retroverted and retroposed. Indurations in region of broad ligaments. Uterus not movable.

Operation April 27th.—Uterus and appendages found retroverted and adherent. Adhesions were broken up and

uterus freed. The round ligaments were sutured to the sides of the incision.

Result.—Discharged June 29th, 1889.

Last seen December 2d, 1890. Was free from all discomfort and felt herself to be well. Uterus movable and the region of the appendages free from indurations. All the pelvic organs in good condition.

CASE XIII.—E. M., æt. 24, married, United States, domestic. Admitted November 3d, 1890.

Symptoms.—Not well since the birth of her child four years ago. For two years has suffered from leucorrhea, backache, and pelvic pain. Pain is increased by walking, standing, and working, and very much during menstruation.

Physical Examination.—Uterus retroverted and fixed in pelvis. Small masses felt upon either side of the uterus; pressure upon these masses and upon the uterus causes much pain.

Operation November 10th, 1890.—Uterus and appendages were found firmly bound down by adhesions. After some difficulty the organs were freed, and the appendages were brought successively into the incision. The ovaries contained each two small cysts, which were evacuated. The fimbriated ends of the tubes were open and the tube walls somewhat thickened. All the appendages were returned to the abdominal cavity; then the round ligaments, one inch from the uterus, were stitched to the abdominal wall near the incision.

Discharged December 14th, cured. The uterus was in good position, and the pelvis was free from masses of any kind.

Seen last June 20th, 1891. She, except for some constipation, was in excellent health, menstruating without pain, in all respects naturally. The uterus was in good position, and she was free from any pelvic abnormality.

CLASS D.

CASE I.—E. G., colored, æt. 22, United States, single, laundress. Admitted February 25th, 1890.

Symptoms.—Leucorrhea for the past two and a half years. Bowels constipated; slight pain on defecation. Pelvic pain.

Examination.—Uterus fixed. Nearly all of posterior half of pelvis occupied by masses, one on either side. Salpingitis and peritoneal adhesions evidently present.

Operation March 12th, 1890.—Vermiform appendix ex-

tended from cecum at right pelvic brim to the sigmoid flexure at the left pelvic brim. Below it the uterus and appendages found embedded in adhesions, greater upon the left. Ovary and tube on left contained pus ; were therefore removed. On right, tube thickened, but the fimbriated end open, although the entire tube had been bound down by adhesions. Ovary enlarged in order to determine its contents ; it was laid open freely, almost to the hilum, the cut surfaces showing only thickened tissue (no cysts). They were brought together with fine silk. The pressure exerted by the sutures was sufficient to control bleeding from the cut surfaces. The appendages upon the right were then replaced. Washing with plain warm water was freely applied. Made a good recovery. Discharged April 22d, 1889, cured. Uterus and right appendages movable. No pain. Menstruates with very little discomfort.

Seen one year after operation, and said she had been very well ; had done her work and could no longer call herself a sick person. There were no indurations about the uterus, and the organ was movable.

CASE II.—M. L., æt. 20, Germany, married, housework. Admitted January 7th, 1891.

Symptoms.—Dysmenorrhea, leucorrhea. Pain for past seven months in back and in both iliac regions, brought on by lifting a heavy weight. Pain constant.

Examination.—Uterus apparently normal. High up on right side, at brim of pelvis, a small tender mass found.

Operation February 2d, 1891.—Median incision, two and one-half inches long. Left ovary found to be cystic. The organ was laid open and the cysts evacuated. The edges of the incision were drawn together with fine catgut. The fimbriated extremity of the right Fallopian tube was found to be adherent to the ovary and the walls of the pelvis. The end was open. The adhesions were broken up, and the ovary, which was found to be enlarged, cut open to about its centre. No cysts found. Sewed up with catgut. All the appendages returned.

Discharged March 6th. Has menstruated without pain. Condition in all respects excellent. Physical examination fails to reveal any pelvic disorder.

April 20th. Condition the same as on March 6th.

CLASS E.

CASE I.—C. B., æt. 19, United States, single, domestic. Admitted March 26th, 1889.

Symptoms and Signs.—Dysmenorrhea. Leucorrhea for past six years. Pain in right iliac and sacral region, constant, and dragging and aching in character. Micturition frequent and painful. Headache and constipation. Never has been in good health.

Examination.—Uterus retroflexed. Ovaries prolapsed, enlarged, and tender. No adhesions, no masses.

Operation April 21st, 1889.—Uterus found to be retroflexed. Ovaries enlarged from congestion and cystic to a slight extent. The round ligaments were attached at a point one inch from the cornua of the uterus to the anterior abdominal wall. The appendages were not molested, as their condition was considered to be due to the effects of the malposition.

Result.—Six months after operation, excellent, the uterus and appendages being in good position.

CLASS F.

CASE IV.—M. W., domestic, æt. 48, married, Germany. Admitted January 5th, 1890.

Symptoms and Signs.—Menstruation painful and prolonged. Leucorrhea for past six months. Four weeks ago began to suffer sharp pain in right groin. Headache and constipation.

Examination.—Posterior fornix of vagina bulging. Uterus displaced forward and to the right.

Operation.—Median incision, three inches long. Tubes normal. Cyst of right ovary incised, its lining membrane detached, and its walls united with silk. The left ovary was one-half inch in diameter and cystic, and was removed with the Fallopian tube.

Result.—Discharged March 8th, 1890, cured.

Ultimate Result.—Has now “no trouble as far as operation is concerned.” This was written one year after the operation. Menstruation had continued regularly.

CASE V.—J. P., æt. 28, United States, married, house-keeper. Admitted March 2d, 1891.

Symptoms and Signs.—Dysmenorrhea. Leucorrhea constant, fetid, and irritating. Present illness began fourteen years ago with pain in left side, dull aching in character and constant. Pain in back. Constant headache and constipation.

Examination revealed a retroverted and retroflexed uterus, with enlargement of the right ovary.

Operation March 16th, 1891.—Median incision, two and one-half inches long. Right ovary found to be enlarged and cystic. The cysts were enucleated and the incisions in the ovary sewed up with catgut. The retroversion was overcome by bringing the fundus forward and stitching the round ligaments to the abdominal wall.

Result.—Discharged April 18th, 1891, cured. Examination failed to show any abnormality in the region of the appendages.

THE TREATMENT OF NON-MALIGNANT RECTAL STRICTURES.¹

BY

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THE object of this paper is, if possible, to present for your consideration a definite scheme of the treatment of rectal non-malignant strictures; to insist upon the invariable direction of therapeutic effort to the *complete* removal of the pathological and symptomatic consequences of stricture by the adequate treatment of their cause; to especially deprecate the inclusion of colotomy in the category of frequently indicated operations; and to advocate the more frequent application of radically curative operative measures.

Etiology.—Since the different anatomical forms of rectal stenosis depend to a great extent upon their origin, a brief

¹ Inaugural thesis read before the Gynecological Society of Chicago, June 19th, 1891.

reference will be made to etiology. Aside from the congenital strictures,¹ which have their origin in developmental anomalies outside the scope of present consideration, tradition makes syphilis the scapegoat of this condition in the majority of the cases. This view, supported by the observations of Allingham, who found fifty-two out of ninety-nine stricture cases suffering from syphilis; of Gosselin, Wales, Juliusburger, and others, is founded upon probability rather than the most careful scientific study of local conditions. Evidently Juliusburger² is correct in asserting that our knowledge of the causation of strictures must begin in a study of the processes that produce the ulcers which, in the majority of cases, antedate the cicatricial contraction. This Juliusburger has endeavored to do; but with the less success because, as a rule, even these ulcers are brought to the attention of the surgeon only at a late date, when the signs diagnostic of their origin are obscured. A series of strictures produced by continuous inflammatory action without ulceration is ascribed by him to constipation; to slow digestion, supposed by Ashton to cause the feces to become too harsh in chemical composition; to the action of irritating materials brought in contact with the rectum, such as strong cathartics and too hot clysters.

Ulcerative processes, which would seem, *a priori*, to be responsible for a larger proportion of the cases of contraction, may occur after inflammation and suppuration of hemorrhoidal nodules; as a result of the action of fissures, as suggested by Koenig; as a result of wounds by foreign bodies acting from above or from below; following lacerations in childbirth; following traumas in pederasty; and, finally, as a result of fistula formation. Dysentery, usually leaving its mark high up in the bowel, tuberculosis, follicular gonorrhea, soft chancre, and syphilis are each responsible at times for losses of substance which are followed by scar contraction and stenosis.

But by whatever manner loss of substance may occur in the rectal walls, the resulting stricture is caused, immediately,

¹ Trélat, "Congenital Stricture of the Rectum in the Adult," *Union Méd.*, Paris, 1886, xli., pp. 253-260.

² "Beiträge zur Kenntniss von den Geschwüren und Stricturen des Mastdarmes." Breslau, 1884.

by insufficient regeneration of normal tissues in their original proportion, and a substitution of inflammatory connective tissue for muscle and mucous membrane.

It must be remembered that, once a narrowing of the rectal calibre has occurred at any point, conditions are presented, analogous to those found in urethral strictures, favorable to the maintenance of inflammatory action both above and below the point of stenosis. Ulceration above is kept up by the pressure of hardened feces; below by the constant discharge of escaping pus from above. Periproctal inflammation and consequent thickening are produced by the proximity of the ulceration in the bowel. The ulceration above the stricture often results in abscess formation, and their rupture through the skin or vagina leaves permanent fistulæ. The frequency of this complication is illustrated by the occurrence, among one hundred and eighteen cases of ulcers and strictures, of twenty-four instances of recto-vaginal and eighteen perineal fistulæ.

Morbid Anatomy.—The situation of cicatricial stenosis of the rectum has been studied by a number of writers. The observations of Perret¹ are the most numerous and at the same time the most accurate, as they were made post mortem. His cases are fifty-eight in number. Of these four involved the anus, extending upward for varying distances. In thirty-two cases the stenosis was within 6 centimetres; in three at 6 centimetres ($2\frac{3}{8}$ inches); in seven between 6 and 9 centimetres; in four at 9 centimetres; in five beyond 9 centimetres; and in three at the junction of the rectum and colon.

Curling² says stricture is commonly from $1\frac{1}{2}$ to 2 inches from the anus, he having found the stenosis at that distance in twenty eight tabulated cases. In two of the remaining cases it was somewhat nearer, and in five at a greater distance.

Gosselin, quoted by Wales, places syphilitic strictures at between 4 and 5 centimetres ($1\frac{1}{2}$ and 2 inches) above the anus. In other words, thirty-nine of fifty-eight cases exhibited stricture at or within 6 centimetres, or $2\frac{3}{8}$ inches, above the anus.

¹ Hermann Kümmell, "Ueber Hochgelegene Mastdarm Strikturen," *Sammlung klinischer Vorträge*, No. 285.

² P. S. Wales, *Baltimore Medical Chronicle*, 1882-3, i., 77.

The presumably congenital stenoses of the rectum described by Eugene Pailh  s¹ were found to be $3\frac{1}{2}$ centimetres above the anus.

Juliusburger collected and tabulated with much care one hundred and eighteen cases of rectal ulceration and of strictures due to ulceration, noting the height² of the disease above the anus. He says: "The affection begins more or less distant from the anal opening, generally in the upper part of the sphincteric region, and extends up to a greater or less height in the bowel. He found among one hundred and eighteen cases the beginning of the ulceration or the stricture, in seventy-nine cases as much as 3 centimetres ($1\frac{1}{8}$ inches) from the anal border, and in twenty-one cases several centimetres from the anal border; in the remaining cases the beginning was not accurately given." The breadth of the ulceration and the quantity of the resulting cicatricial tissue have been found very variable. Thus Juliusburger found that the majority of the ulcerations extended upward on the average from 5 to 7 centimetres; an almost equal number reached a height of 10 to 13 centimetres; the remainder had a slighter or greater longitudinal extent, and only a few extended up to the flexure.

Gosselin says that the thickness of the cicatricial bands is never very great. On the cadaver he found it from 5 to 10 millimetres, and on the living subject, in eight cases where incisions had been made of 3 to 4 millimetres, he had not exceeded the limits of the rectum. In width it ranged from the card-like narrowing of mucous membrane to a band of several inches. In syphilitic stricture Gosselin says it rarely reaches a centimetre, so that the finger in his cases was always able to reach its superior border.

There are no statistics of which I am aware to establish the relative frequency of the valve-like strictures, and of those broad, thick, unyielding stenoses which are described by English authors as tubular. The latter, as implied by

¹ E. Pailh  s, "Th  se de Paris," No. 124, 1886.

² Mr. Harrison Cripps, page 200 of his "Diseases of the Rectum and Anus," says "he agrees with Brodie, Syme, Kelsey, and Van Buren as to the rare occurrence of stricture of the upper part of the rectum."

Gosselin, would seem to be of much less frequent occurrence than the former.

It is not to be forgotten that in the severe cases of stenosis resulting from extensive ulceration there is often a certain degree of implication of the periproctal tissue, so that the rectal walls are, as it were, fused into the surrounding structures.

Cicatricial stenosis of the rectum must be studied as a condition, not as a disease; hence the basis of classification must be anatomical rather than pathological. It is necessary, in order to adapt treatment to individual cases, to make a diagnosis not only of the fact that stenosis exists, but of the longitudinal extent of the constricting band, and of complicating conditions if they exist.

On the basis of longitudinal extent, strictures of the rectum fall naturally into three classes, viz., *valve-like* strictures, thin, membranous, and generally yielding; second, *annular* contractions, usually hard and unyielding, and including those cases in which the band of scar tissue may in longitudinal extent be fairly compared to a finger ring; and, third, those more extensive cylindrical masses which have been described as *tubular*. Especial indications for treatment are presented when either of these three forms of stricture is complicated by the co-existence of other strictures, of ulcers, or of fistulæ. Indeed, the majority of cases of stricture have as their origin or consequence ulcers above or below the seat of constriction. They may also be complicated by fistulæ leading to neighboring cavities or the external integument.

Diagnosis.—In the subject of the diagnosis of rectal stenosis we are not at present interested, except in so far as is concerned the amount of involvement of the bowel as suggested by the above classification.

The accurate clinical studies which are now made of the degree of contraction and the longitudinal extent of urethral strictures would strongly suggest the importance of similar studies in the condition which we are now considering. This point is easily cleared up if the finger can be passed through the stricture. This being the case only in the minority of instances, it is necessary to use the larger sizes of olive-pointed

urethral bougies. Even these are unsatisfactory, as the olive only gives information of a difference of calibre at different points, not of the amount of that difference. In other words, if an olive-pointed instrument passes through a stricture of the rectum into a free space, we assume that above the narrowest point of stenosis there is a wider space, but not that the calibre of the bowel is normal at that point. The urethrometer of Otis would easily suggest a similar apparatus which would determine the full calibre of the rectum above the outer contraction and establish the existence or non-existence of other strictures. The extent of the contraction is usually made known when the stricture has been severed posteriorly by linear proctotomy preparatory to further treatment.

Treatment.—The present status of the treatment of cicatricial rectal strictures is approximately as follows: ¹

1. When the stricture consists of a thin, valve-like fold, gradual dilatation.

2. When the cicatrix is small but dense, incisions, with or without rapid dilatation, are sometimes practised when gradual dilatation has failed (internal proctotomy of Gosselin ²).

3. When the stricture is thick and dense, and is attended by some ulceration or by fistulæ, external incision through the stricture.

4. In cases complicated by extensive ulceration and burrowing of pus, and especially in those demanding speedy and certain relief, colotomy. ³

I have omitted mention of the treatment by galvanism, since as yet the results seem to be identical with those of dilatation. Nevertheless the advocates of the method, and especially Robert Newman, ⁴ contend that it has a wide range of applicability, and is often successful where "other methods have failed."

¹ Mr. Harrison Cripps considers the methods of treatment under the heads: 1. Gradual Dilatation; 2. Internal Division; 3. Complete Section of Stricture, with Division of External Parts; 4. Colotomy. ("Diseases of Rectum and Anus," 1884.)

C. B. Kelsey considers treatment under: 1. Dilatation; 2. Division; 3. Colotomy. ("Reference Handbook Med. Sci.," vol. i., p. 278.)

² Proposed originally by Amussat.

³ Allingham, "Internat. Encycl. Surgery," vol. vi., p. 118.

⁴ R. Newman, Journ. Am. Med. Assoc., May 17th, 1890.

In America, partly owing to the stimulus given by the invention among us of Wales' bougies, the inclination is to place much reliance upon gradual dilatation. It is not the present intention to discredit that method in the cases in which it accomplishes stretching of the cicatrix with reasonable rapidity and to such an extent that the ulceration above and below is brought to an end. In such cases gradual, gentle dilatation is strongly indicated; indeed, a more severe course would be unwarrantable.

In the severer forms of the condition, in which the dilatation produces little effect on the scar, the method is open to the following objections, which I believe are obvious:

1. The treatment is only palliative, *i.e.*, simply permits the patient to void the feces with more or less effort, but does not give a *free* outlet.

2. The treatment is never finished, the patient being obliged to continue the process of dilatation during the remainder of life.

3. Though usually the pain caused by the treatment is bearable, especially with cocaine, it is in some cases excruciating, even when every care is used.

4. The patient, weakened by the long delay and the pain of the treatment, will occasionally lose hope, and, ceasing all effort to obtain a cure, fall a victim to the complications of the condition.

5. The method is not devoid of danger in its application, since each introduction of a conical bougie is itself a source of traumatism, and in the highly septic rectum exposes the patient to the dangers of infection to an unusual degree.¹

¹ That considerable force is necessary for the so-called gradual dilatation of these strictures is proved by the fact that the rectal walls above the stricture are unable to force the hardened masses of feces through the narrowed channel. The surgeon should not forget that the amount of dilating force exerted by the Wales' bougies is greater in proportion to the slowness with which the canal expands. A comparatively blunt bougie will, in other words, require greater exertion on the part of the surgeon for its introduction than a slowly tapering one, and will thus warn the surgeon when he is in danger of rupturing or unduly stretching the rectal walls.

M. Paul Berger cautions against accidents in dilatation (*Gaz. des Hôpitaux*, December 4th, 1883).

6. The patient, before the slow treatment has given sufficient exit to the feces, runs a certain risk of fecal impaction.

7. The degree of stretching obtained by the bougie treatment in the severer forms of stricture of the rectum is, in the hands of the majority of careful surgeons, too slight to satisfy those who bear in mind prominently the constant danger to which a patient with rectal stenosis of any degree is exposed in pylephlebitis, hepatic abscess, septicemia, suppurative proctitis, and, in long-continued suppuration above the stricture, amyloid degeneration of viscera.

8. Finally, though the stricture may be sufficiently dilatable to permit of extrusion of the feces, a sufficient degree of stenosis will usually remain in the severer cases to render the patient miserable by the continuance of unrelieved symptoms, such as pelvic and dorsal pains, alternating diarrhea and constipation, painful and even hemorrhagic defecation, hemorrhoids, and offensive discharges of pus from ulcerating surfaces, not to mention the constitutional debility, loss of appetite, indigestion, headaches, and especially the increased liability, from impairment of health, to intercurrent diseases.

It is in these severer cases, and in those still more grave in which local complications have already presented themselves, that a method of treatment is imperatively demanded which shall afford immediate and permanent relief. In the present status of professional opinion, there is no generally accepted intermediate treatment between external proctotomy and colotomy.

When external proctotomy has failed, or when it is in any way contra-indicated in the opinion of the operator, colotomy is the only resort. In England colotomy has gained such favor that a very large number of cases have been reported, many surgeons doing the operation upon indications which would here be considered inadequate.¹ The disadvantages of an artificial anus are so numerous and so obvious that it is unnecessary to dwell upon them here. The procedure of

¹ An example (of which there are many), the case published by N. P. Bloker, *Lancet*, July, 1881, p. 659, may be cited. A boy, aged 16, had a hard annular stricture which was thought to be of a syphilitic nature. Antisyphilitic treatment was instituted and kept up till the patient almost died of obstruction, when *colotomy was performed* with immediate relief.

colotomy will always be considered a very disagreeable last resort, often restoring the patient to life and general health, only to condemn him to perpetual physical and mental discomfort, often almost unendurable.

Professor Senn ("Intestinal Surgery," p. 142) speaks forcibly upon this subject, while urging the importance of removing or rendering harmless the cause of intestinal obstruction or immediately restoring the continuity of the intestinal canal. He says:

"A patient with an artificial anus is indeed an object of commiseration, as experience has sufficiently demonstrated how difficult it is in many instances to close the abnormal outlet, even after the cause of obstruction is subsequently removed or corrected spontaneously, without exposing him a second time to the risks of life incident to another abdominal section. If the causes which have led to the obstruction are of a permanent character, all attempts at closing the fistulous opening will, of course, prove worse than useless, and the patient is condemned to suffer from this loathsome condition the balance of his or her lifetime, without a hope of ultimate relief. I believe I can safely make the statement, without fear of contradiction, that most of these unfortunate patients would prefer death itself to such a life of misery."

Various attempts have been made from time to time to establish a method by which the severer strictures could not only be relieved but permanently cured without resorting to the makeshift of colotomy.

The hope of permanent relief from internal incisions (internal proctotomy) must have been based upon the expectation of a possible union of the wound by the adhesion of the upper with the lower wound edges, rather than by the substitution of scar tissue which in a short time would contract as much as the original cicatrix.

The rude, unscientific method of rapid dilatation or divulsion must have been employed upon the same unsubstantial theoretical grounds.

A pupil of Péan¹ has recently published a method which has some merit of originality. Péan makes a posterior proc-

¹ André Jacquinet, "Contribution à l'étude et au traitement du rétrécissement vénérien du rectum," Paris, 1890, G. Steinheil.

totomy as the initial step of his procedure, and closes the lozenge-shaped wound thus presented by sutures which unite the mucous membrane to the skin. This operation could be easily performed in those cases in which the stricture is near the anus. The result may be a permanent cure of the strictures. The most serious objection to it, after that of its limited applicability, is that the external sphincter is permanently disabled, so that the patient cannot retain fluid feces or gas.

Plastic operations have been tried by the implantation of a mucous flap from above upon the wound surface, made by a posterior incision through the stricture and contiguous tissues.

Dieffenbach proposed, many years ago, the removal of the cicatricial mass and the bowel below it, and uniting the stump of the rectum to the skin. The method often failed and never became popular, because it was difficult to perform, was limited in application to the lowest strictures on account of the proximity of the peritoneum, and because primary union did not occur on account of the lack, at that date, of antiseptic methods.

The general indications to be followed in the treatment of cicatricial strictures of the rectum are twofold, viz., to restore the normal calibre of the bowel and to remove the pathological conditions causing the stricture or consequent upon it.

I conceive that the first general indication is to be met by radically different methods, depending upon the character of the stricture. In the first group of the anatomical classification, that of valve-like strictures, whether congenital or acquired, our hope of success by the method of dilatation is greatest. Occasionally we find in the literature of this subject accounts of such cases that seem to have been permanently cured by gradual dilatation. Certainly, in all uncomplicated valve-like strictures this method should be tried.

In the second class of cases, the annular strictures, we have the most debatable ground. The mere condition of stenosis, other things being equal, should be treated by dilatation. If the contracture is of recent formation, and is yielding and flexible, it may be sufficiently stretched to give no further trouble; but if there is much periproctal cicatrization, and if

the scar is old and hard, the amount of dilatation will be small. It is in such cases as this that it seems our resources should be increased. The mere extrusion of feces is not the only end to be accomplished by dilatation. The existence of strictures of large calibre is of as much import in the rectum as in the urethra, and treatment which only partly removes the encroachment upon the lumen of the bowel is not a complete success, even when the patient rejoices in his newly found ability to freely defecate. The ulceration above the stricture will go on, and any neglect of the continued use of the bougie will result in recontraction of the scar.

Tubular strictures are less doubtful as regards their indications for treatment, inasmuch as dilatation is less frequently successful than in the annular form.

Complications of either of these forms by extensive ulceration and by fistulæ give additional indications for the complete removal of stenosis.

In none of the forms of this condition is forcible, rapid dilatation indicated. The procedure is so dangerous and unscientific that it is now practically obsolete, and its discussion is unnecessary.

Internal incisions through the stricture have been frequently practised with success in the valve-like form, and may occasionally be serviceable when combined with subsequent dilatation. Their employment, however, is hazardous.

Péan's method is not especially indicated in any of the forms mentioned, and the destruction of the external sphincter would seem still further to limit its applicability.

External proctotomy—a posterior incision through stricture, periproctal tissue, and skin almost as far as the coccyx—occasionally gives a permanent cure by spontaneous healing analogous to that which takes place in Péan's method.

External proctotomy is indicated when dilatation has failed, and when the patient is found to be too weak for a more extensive operation on account of disease elsewhere or on account of the results of the stricture itself. It is so easy to perform, and gives such excellent drainage, that it should be performed as a preliminary operation when, in cases of accessible strictures, complications exist, such as extensive ulceration and fistulæ, which would prevent the success of a radi-

cal procedure. It will in such junctures obviate the necessity of colotomy by allowing temporary free escape of feces and complete drainage of the bowel.

The indications for colotomy are exceedingly limited. It is resorted to in Great Britain in very complicated and difficult cases. It would seem that it should be applied only in case posterior linear proctotomy is unavailable, *i.e.*, in high tubular strictures (above the peritoneal limit) complicated by higher strictures,¹ by fistulæ, or by extensive ulcers. Such cases are very rare, and it is sincerely to be hoped that we will in the future hear of fewer colotomies for this condition. This delectable state of affairs cannot, however, be attained unless the stricture can be permanently removed.

Excision of the stricture, with circular suture of the bowel, must be followed by failure in the majority of cases, because, as Mr. Harrison Cripps has observed, the cicatricial tissue resulting from the operation would have as great a tendency to contract as that which had been removed. This would not hold good, however, if primary union were secured. But in the septic rectum this is difficult to obtain, except by a special technique to include drainage and appropriate antiseptic dressings.

The procedure to be presently described provides for drainage and dressings, and renders possible a primary union through a certain extent. The recent labors of a large number of distinguished operators have done much for the complete removal of malignant neoplasms of the rectum. It would seem that in so serious a condition as we find in even non-malignant stenosis their experience should be utilized. Dieffenbach's operation—amputation of the rectum—is modified to give easy access to the line of sutures for disinfection and dressing, and by leaving the external sphincter as nearly as possible intact the patient retains control of gas and fluid feces. The procedure may be termed *modified amputation*.

The object of the operation being to annul the action of a circular mass of scar tissue surrounding the bowel and encroaching upon the lumen of the tube, it is obvious that it is

¹ It is possible that some of the highest strictures may hereafter be relieved by anastomosis, which is now so easily performed by the use of approximation plates.

necessary either to permanently remove all the cicatricial tissue in question, or to permanently prevent recontraction of the ring by removing a portion of it and substituting at that point normal, easily distensible tissue which shall unite to the other structures by a minimal cicatrix. This latter method—a plastic procedure carried out by the introduction of a mucous flap—has been repeatedly tried, as already mentioned, and as often abandoned on account of the great difficulty in getting the necessary primary union of a septic mucous flap in the septic rectum. Hence it is best, in all cases in which it is possible, to remove the entire mass of cicatricial tissue.

The operation is performed in the exaggerated lithotomy position. Access to the parts for this purpose is attainable by stretching the sphincter and operating, as it were, within the tube of the rectum. This method is to be criticised because it does damage to the sphincter muscle, because it does not give an abundance of space for manipulation, and because drainage and rest during after-treatment are not guaranteed by it. Access to the parts, with subsequent rest and drainage, are best secured by a median posterior incision through the bowel, the periproctal connective tissue, and skin, beginning above the stricture and extending almost to the coccyx. Hemorrhage is almost entirely capillary and is usually arrested by pressure.

The second step of the operation consists in denuding the surface of the bowel below the stricture, so that the rectum, loosened by the subsequent excision of the scar and by dissection above, may be brought down over a raw surface to be united to the skin. This denudation is accomplished by beginning at one extremity of the severed anal margin a superficial incision through the mucous membrane, and carrying it around to the opposite side of the anus. This incision, merely passing through the integument, simply furnishes a starting point for the separation of the mucous membrane. This dissection, though not difficult, must be done carefully, since if too much tissue is removed the intimately adherent sphincter muscle will be impaired or destroyed. Blunt instruments should be used as far as possible, in order to avoid hemorrhage. An abundant supply of hemostatic forceps should be at hand for the small arteries, which at first bleed

freely, but cease readily after pressure has been applied for a few minutes.

Dissecting out the cicatricial tissue, the third part of the operation, is easy and rapid where the stricture is annular and is not so high up as to endanger the peritoneum. The tube of mucous membrane, originally split by the posterior incision and loosened by dissection from the surrounding tissues, is conveniently grasped by a heavy hemostatic forceps, affording a firm hold of the cicatricial mass above. Making traction upon the constricting mass toward one side of the operator, the scissors are carefully used to separate it from the surrounding normal lax connective tissue, under constant control of the palpating finger. Hemorrhage here is more copious than before, but is easily controlled by pressure forceps. The annular strictures offer more favorable conditions for removal than the cylindrical, being palpable from the vagina through their entire longitudinal extent. The vagina and the peritoneum can, in such cases, be easily and certainly avoided by constant, painstaking palpation, since the cul-de-sac of Douglas, the lowest peritoneal fold, can be located in this way.

In the case of cylindrical stricture, the upper edge of which can be felt by rectal palpation to lie above the level of Douglas' sac, when the operation has reached this stage it would be better to dissect out the stricture more extensively behind than in front, in order to avoid the peritoneum. As was intimated before, if primary union took place no recurrence of stenosis would follow such an operation, providing the posterior portion of the cicatrix were thoroughly extirpated, since the circular continuity of the scar would be permanently interrupted.

At this stage of the operation the peritoneum may be accidentally or purposely opened.

The accident may be avoided by deliberate and careful procedure, aided by constant irrigation or attentive sponging, or by both alternately; by frequent palpations, and by full exposure of the seat of operation with retractors. Should the accident occur, the opening must be immediately closed by interrupted sutures with fine aseptic silk, these stitches to be buried subsequently by others. When the peritoneum has

been thus opened in the corresponding operation for carcinoma, experience has taught that, if feces have not passed into the abdominal cavity before the application of the sutures, the accident is not of the gravest importance. It should be remarked that before the last step of the operation, the application of sutures, has been performed, there should be a careful search made for openings into the peritoneum.

The intentional opening of the peritoneum would be entirely unnecessary in the removable strictures lying below the peritoneal level. In those situated somewhat higher, with a portion of the scar mass lying between the anterior and posterior peritoneal limits, the procedure suggested above—viz., to leave a portion of the scar in front while removing all of that behind—may be adopted.

In the case of that minority of strictures, cylindrical or annular, which lie at or above the peritoneal level, the deliberate opening of the abdominal cavity may be undertaken with due precautions and proper conservatism. In dense strictures at this point, producing the usual interference with the functions of the alimentary canal, gradual dilatation must be tolerated as long as it gives complete relief, in view of the additional danger of opening the peritoneal cavity. Nevertheless I am unable to see why, with an improved technique, the bringing-down of the bowel to the anus through the opened peritoneum should be more dangerous than the establishment, at one sitting, of an artificial anus in the colon. Indeed, the surgery of the rectum seems strangely encumbered even yet by the old-time dread of the peritoneum, in marked contrast to the aggressiveness of vaginal surgery, which does not hesitate to operate in the peritoneal cavity through the vagina, and, on occasion, to drain the peritoneal cavity into that septic tube. When the surgeon has decided, by using olive-pointed bougies or by digital palpation, that a tubular stricture extends above the peritoneal limit and that the bowel must be drawn down through an opening in the peritoneum, the posterior incision will extend upward only to a safe distance, and not through the whole of the stricture. The dissection of the mucous membrane and submucous tissue is begun as already described. But before the peritoneum is opened the separated mucous tube, with its supporting connective tissue, must be included

in a strong ligature drawn so tightly that fecal matter cannot escape. The site of operation is then to be carefully disinfected with an antiseptic solution, the instruments inspected to see that all are clean, the hands of the surgeon rinsed or washed, and the wet towels about the field of operation changed. The peritoneum may now be opened in front of the bowel, and, the left forefinger being introduced into the pelvic cavity, the rectum can be separated from its peritoneal attachments and drawn down. Before the strictured portion of the intestine is cut off, the parietal peritoneum must be carefully sutured to that of the rectum by a double row of Lembert sutures. The vascularity of the rectum will insure it against sloughing, if the sutures are not introduced too deeply.

The removal of the scar tissue having been effected by cutting of the dissected bowel with scissors (whether the peritoneum has been opened or not), the final step of the operation consists in the application of sutures to hold the rectum in position with the anal margin. The anus, laid open posteriorly, forms a crescent with horns embracing the wound in the retro-rectal tissue. The bowel above, already dissected out, is drawn down and presents a corresponding crescentic outline. The horns and middle points of the two crescents are now united by deep sutures, and the space intervening between these sutures carefully closed by fine superficial ones. The abbreviated rectum now lies in contact with the external sphincter and is sutured to the anus.

The posterior wound is not immediately closed, but is provided with two or three deep sutures left untied until union has occurred between rectum and anus, when, after granulations have covered the exposed surface, the threads may be tightened and the wound speedily closed. When this wound has healed, the external sphincter will again be able to act. Excellent drainage is provided by thus leaving the outer wound open for a time, and an additional safeguard is given against septic infection.

The dressing of the wound demands the introduction of a stiff but smooth rubber tube six inches long, with a few large holes near the upper end, into the rectum, and packing about it with iodoform gauze. The anterior portion of the wound

is especially protected, by moderately tight packing, against discharges. The end of the tube projects into a large mass of absorbent dressing material which is frequently changed.

By the daily use of opium, movement of the bowels is prevented for a week or more, giving ample time for firm union.

Juliusburger reports several cases in which strictures and ulcers of the rectum were treated by excision with excellent results.

The following case is presented merely to illustrate the possibility of permanent cure by amputation. The external sphincter was unfortunately not preserved.

CASE.—Mrs. M., aged 26 years, began to menstruate at 16 years of age. At 21 years of age she was married, and in six months had a miscarriage. During convalescence from this accident patient passed blood from the bowels in what seems to have been a dysenteric attack. At one time she observed a “piece of flesh” in the stool, accompanied by a little stringy blood. There was at this time much pain in the rectum.

The patient denied the existence at any time either of gonorrhea or syphilis. She denied rectal traumas, and especially unnatural coitus.

In January of the following year she noticed the first difficulty in securing a passage of the bowels. There seemed an inordinate desire to defecate, but the stricture resisted her efforts, except when the feces were liquefied by strong cathartics. The patient lost strength, appetite, and weight, became subject to headache, was tortured by pains in the back and rectum, and, failing to digest her food, her bowels bloated to a considerable degree.

An unsuccessful operation was performed in 1888, one and a half years after the beginning of the symptoms of stricture. This operation consisted in posterior proctotomy combined with excision of a part of the stricture mass. The excision was limited entirely to the cicatricial band, and as the thermocautery was, very improperly, applied to stop hemorrhage, the resulting circular cicatrix was thicker and denser after six months than before the operation. The general health deteriorated on recontraction of the scar, the old symptoms of purulent discharge, pain, etc., took place, and, as the passage

of bougies gave great pain, she clamored for an operation to give permanent cure.

Amputation of the rectum was performed by me. The hard annular stricture was excised, and the gut above sewed to the anal margin.

In dissecting out the mucous membrane, there were no pains taken to leave the external sphincter muscle; consequently the woman has no control over thin feces.

At the end of two years there is no difficulty in the movement of the bowels, no contraction, and the flow of pus has long since ceased. Had it then occurred to me to preserve the external sphincter, the result might have been much better.

The case may be regarded as a permanent cure, as contraction always takes place, if at all, in less than two years.

Conclusions.—In conclusion, kindly allow me to submit the following propositions as representing my personal convictions, if not the inevitable logical conclusions of the arguments presented.

1. The treatment of rectal non-malignant strictures should not stop short of the complete removal of the symptomatic and pathological consequences of the stenosis.

2. For therapeutic purposes every case of rectal stricture should be carefully examined and referred, according to its longitudinal extent, to the category of valve-like, annular, or tubular stenoses, and, according to its pathological relations, to the class of uncomplicated or complicated strictures.

3. Most valve-like strictures are amenable to treatment by gradual dilatation.

4. Some of the annular strictures are sufficiently distensible to be relieved by gradual dilatation; but this treatment must, in this form of malady, be kept up indefinitely.

5. The uncomplicated annular contractures not amenable to gradual dilatation, and the tubular strictures, below the peritoneal limit, are permanently curable by Péan's method, by modified amputation, and occasionally (but with much uncertainty) by posterior linear proctotomy.

6. Cases of stricture complicated by ulcers or fistulæ must usually be simplified by a preliminary posterior proctotomy and scraping out of fistulæ before the radical operation is attempted.

7. Treatment by gradual dilatation, prolonged indefinitely, as is usually necessary, must be tolerated only when relief is complete and when the patient is sufficiently intelligent to comprehend its importance.

8. Forcible dilatation or divulsion is dangerous and should be abandoned.

9. Internal proctotomy leaves a wound exposed to infection without proper dressings or drainage, and should be regarded as dangerous.

10. External proctotomy is a valuable temporizing measure, giving free outlet to feces and pus, and allowing the patient to recuperate in general health so as to bear a radical operation.

11. Péan's operation is objectionable, because it permanently destroys the action of the external sphincter.

12. Plastic operations by the introduction of a mucous flap fail because of suppuration.

13. Colotomy should be resorted to only in those exceedingly rare cases in which there are undilatable tight strictures too high up to permit of excision, and in which anastomosis cannot be performed.

14. If ever resorted to, colotomy should be done in such a way that the preternatural anus can be subsequently closed, if found desirable.

15. Modified amputation of the rectum, as described, offers almost if not quite the only reasonable hope of permanent cure without loss of sphincteric control in the undilatable strictures, annular and tubular.

16. The peritoneum is to be opened for the treatment of this condition with the same precautions as are adopted in the operation for the removal of malignant neoplasms.

FOUR CASES OF REMOVAL OF MYOMATA BY ABDOMINAL SECTION.¹

BY

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(With ten illustrations.)

CASE I.—*Removal of an intraligamentous myoma growing in the right broad ligament and weighing about twenty pounds; recovery.*—M. J. D., æt. 45, Peterboro. Sent by Dr. Goldsmith. Has been unwell regularly until two months ago, when she missed a period. IIIpara; last child 15 years old. Looks well. Says she noticed that she was gradually enlarging in size. Four years ago she noticed a lump in right lower abdomen, but of late there seemed to be a steady, gradual enlargement. No pain and but little inconvenience. On examination found a tumor enlarging the abdomen and feeling very much like an edematous myoma, but felt that it might be ovarian, either solid or with colloid, non-fluctuating contents. Sound passed into uterus and proved that the uterus moved freely from the tumor. Tumor size of a man's head. Advised operation, chiefly on account of the doubtful nature of the case.

Operation.—Chloroform by Dr. Barker. Assisted by Dr. A. H. Wright. On opening abdomen a small quantity of ascitic fluid ran out. Passing fingers down, felt the uterus to the left and the left ovary and tube. Right ovary, with corresponding tube, stretched over the tumor after it was drawn out of the abdomen. Contents of tumor solid, though giving an indefinite sense of fluctuation; therefore diagnosed as an edematous myoma. It was entirely developed in the right broad ligament. Tied the broad ligament with five or six

¹ Read by invitation before the Huron Medical Association, July, 1891.

chain sutures, applied the rope clamp, cut away the tumor, transfixed with the hysterectomy pins, placed the permanent wire clamp in situ, and put a glass drainage tube into the cul-de-sac of Douglas. The peritoneum was then carefully adjusted around the stump by putting the sutures next the pedicle close together, and by taking with each of them an extra broad edge of peritoneum. The sutures were of silk, and passed through skin, muscle, and peritoneum. No separate sutures were used for the peritoneum alone. The stump was then tucked up on iodoform gauze and tanned with iron solution. Iodoform was dusted freely around the parts to

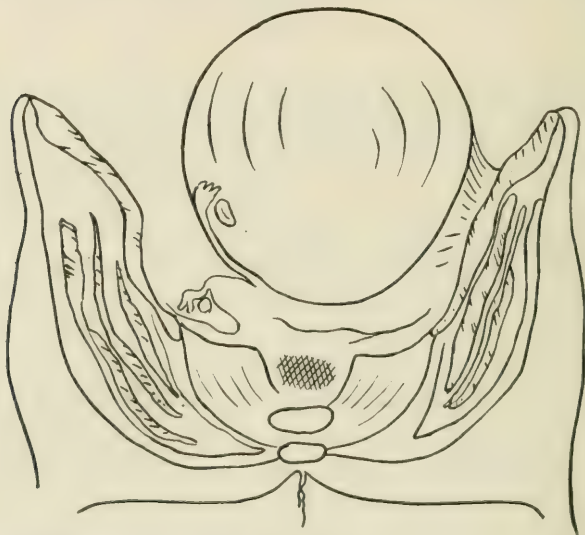


FIG. 1.—Diagram of Case I., seen from behind, showing tumor in right broad ligament, and uterus and ovaries crowded down to the left.

avoid any descent of septic matter along the opening through which the pedicle emerged.

The drainage tube was removed on the fifth day.

Temperature rose to $100\frac{2}{5}^{\circ}$ evening of first, second, and third days, as it does after nearly all abdominal operations. Pulse 94 evening of fourth day. Average pulse 72-82. Abdomen quite distended at end of first twenty-four hours; much relieved by flatus tube. This distention is undoubtedly due to tension and dragging forward of rectum, and, if not fatal, becomes less as the clamp sinks in and drops back a little, and thus relieves the tension. The right uterine cornu had

the clamp diagonally across it from base of right broad ligament to centre of the fundus. This is not, therefore, a hysterectomy in the ordinary and strict sense of the term, but is a case of removal of a large myoma developed in the right broad ligament, of one ovary and tube, and of part of the right uterine cornu.

Bloody discharge appeared from vagina on seventh day, rather later than usual after operation. Bowels moved on fifth day. Distention was troublesome in colon until the seventh day. The clamp came off on the eighteenth day, leaving a deep, granulating hole. Some slough was removed beyond the clamp. The wound soon filled up, and the patient went home in splendid health.

CASE II.—*Removal of an intraligamentous and uterine multinodular myoma, weighing in all about forty pounds; broad ligaments filled out by the largest part of the tumor, and uterus raised up bodily by the large mass in the pelvis; enucleation; terrific hemorrhage; death thirty-six hours later.*—N., single, æt. over 50. She looked about 50 to 55 years. Sent by Dr. Dickson, of Parkdale. Last menstruation several years ago. Was very regular before that, but lost a good deal. She noticed a tumor on right side of lower abdomen three or four years ago. She was never laid up with any attacks of severe pain. Looks anemic. On examination found a large, irregular, non-fluctuating tumor. Contents feel semi-fluctuating. Diagnosis lies between ovarian tumor with colloid contents and edematous myoma. Uterus drawn up, but could not be outlined, and sound could not be passed. Large mass pressing down into pelvis in front of rectum. Distinct sense of fluctuation not made out. Tumor was as large as full-time uterus, and woman was much inconvenienced. Tumor growing larger.

Operation.—St. John's Hospital. Chloroform given by Dr. McMahon. Assistant, Dr. A. Davidson. On opening the abdomen found a large tumor having some of the appearances of an edematous myoma with nodules, but, even at this stage, of a doubtful appearance. Spreading out the folds of the broad ligament, it filled the pelvis, and there was as much tumor below the vesico-uterine pouch as above it. The myoma corkscrew had been inserted, and the puncture bled so

freely after removing it that I determined to remove the growth. There could now be no doubt that it was a solid tumor, or at least an edematous tumor, and that if not removed the woman would bleed to death. I was thus facing a terrible undertaking in a woman of over 50. Contrary to my expectation, the tumor was what many deny ever exists, an edematous multinodular myoma, and the capsule could not be peeled off or the tumor enucleated. The hemor-



FIG. 2.—Diagram of Case II., seen from behind, showing uterine fundus with small fibrous nodules and larger tumor, also position of tubes and ovaries and tumors filling pelvis.

rhage was terrific. I tied off the broad ligaments in sections as rapidly as possible, and as far down as possible, but there was a wealth of tumor beyond with a broader base in the pelvis than above. I had plenty of clamp forceps of different kinds, and soon had them nearly all in situ, controlling one portion or another of the capsule. The capsule would peel off a little distance, and then sink in deeply into the tumor and tear off. I therefore manufactured as best I could two

pedicles, and applied two serre-neuds. These pedicles or stumps were so short that the wires were dipping down into the abdomen. Peritoneum stitched around the stump, to leave free drainage and shut off the peritoneal cavity. Incision extended from midway between umbilicus and tip of sternum to crest of pubes. This was closed. Bladder required peeling off the front of the tumor. The early ligation of the broad ligaments did not increase the mobility of the tumor. The pelvic vessels were readily seen in the large gaps left in the broad ligament on either side formerly filled by the tumor. The hemorrhage was now controlled and patient put to bed. I was afraid she would die on the table. The arms and legs were bandaged, to force the remaining blood to the head to sustain life. Enemata and subcutaneous injections were given. The patient improved. At 2 P.M. temperature 97.6° , pulse 84. The pulse then went up to 100, on further to 106, to 110. A little oozing took place from the wound. The clamp was tightened; oozing continued. One clamp seemed to tighten too readily, and I have no doubt it slipped and allowed the hemorrhage to occur from the small, short pedicle I was forced to make on the left side. It was so short that no pins could be passed through it to prevent the slipping of the wire. The patient was so weak that any further endeavor to stop this hemorrhage would have been useless. Nothing but a wire clamp would do it, and a wire clamp would slip off owing to the fact that the broad end of the tumor was situated in the pelvis. It was like tying a fold on the surface of a rubber ball. The urine was bloody. The patient lived for thirty-six hours. I have seen a great many hysterectomies done and a great many myomata, but I never saw any as unfortunately developed as this one. The tumor would weigh about forty pounds. On the opposite page is a sketch of the growth that will give you some idea of the difficulties of the case.

CASE III.—*Removal of a large thirty-five-pound myoma growing by a pedicle, about six inches in diameter, from the upper posterior surface of the left broad ligament, together with the removal of a pregnant uterus (about four and a half to five months, fetus macerated) and both ovaries and tubes; recovery.*—Mrs. H., æt. 39. Sent by Dr. Giles. Menstrua-

tion regular until February, 1891, when it ceased. Saw a slight sign the last week in April. Thought she was pregnant when the flow ceased in February. Has had three children, the last ten years ago; never pregnant since. A year ago last February she noticed a lump in left iliac region, about the size, she says, of a hen's egg. It steadily increased in size up to the present time. For a year after she noticed this lump the menstrual flow was increased and clotted. Had more pain with it, and for a year before she noticed the lump she complained of pain in the back. On examination I found abdomen very much distended; intestine pressed upward

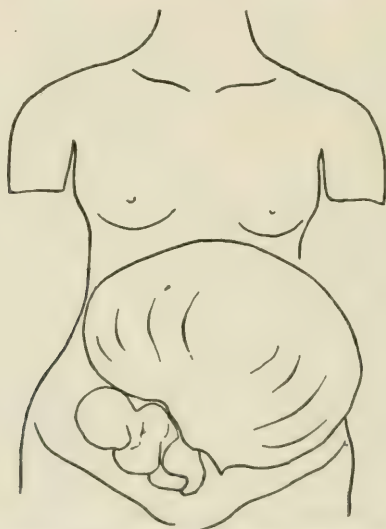


FIG. 3.—Large mass is the tumor; the smaller should have been drawn as an ovoid body representing the gravid uterus.

and into loins; lower abdomen full, and an apparent sulcus dividing the large mass of tumor to the left from the smaller mass to right and below. In the larger mass of tumor there was a semi-fluctuating sense, but in the smaller mass distinct fluctuation. Cervix soft, vagina purplish.

Diagnosis.—Edematous myoma and pregnancy.

Advised operation.

Operation.—Knowing the formidable nature of the undertaking, I had an extra quantity of instruments—twenty-four compression forceps, eight or ten large flat sponges, as well as small sponges, and my large satchel well supplied with

extra clamps, etc. Done in theatre, Toronto General Hospital. A wineglass of brandy given before anesthetic. Began with chloroform, and then gave ether. Anesthetic given by Dr. Hill. Assistant, Dr. A. H. Wright.

Opened abdomen in the middle line. At once made a good free incision, so as to lose no time. Found the pregnant uterus and ovaries to right and below, and a large, solid or edematous myoma springing from a pedicle, the thickness of a man's thigh, from the back of the left broad ligament. Ligated the broad ligament on right side with no difficulty, and stripped it down to gain more room. The omentum, which was adherent over whole front of the tumor, was hastily peeled off by my assistant while I drew out the tumor manually. No corkscrew was used. Then tied off with more difficulty the outer end of left broad ligament, and put the rope clamp over tumor and pregnant uterus, thus making a pedicle of the cervix uteri. After tightening this, cut away the tumor, weighing about thirty-five pounds, and the pregnant uterus. Liquor amnii gushed out and a macerated fetus showed itself. In endeavoring to remove this I found, much to my annoyance, that the fetal head had become fastened below the rope clamp—an accident that could not have been foreseen. What was to be done? Clearly only one thing—to slacken up and remove and re-tighten. I therefore grasped the edges of the stump in large forceps and gave them to Dr. Wright. Dr. O'Reilly agreed to extract the head, Dr. Grassett I asked to press up the uterus per vaginam, and I myself attended to the rope clamp. The removal of the head was managed like a boy's race, with a "one, two, three, and away," and if it did not cover us with glory it covered us with blood. The blood flowed fast and furious, but by a few rapid turns of the handle of the clamp the rope sank home to its destination and the storm was over. The placenta was peeled off readily, and evidently was not active. The fetus would indicate a four and one-half to five months' pregnancy. The wire clamp was now applied, pins inserted, and the stump dressed as in Case I. The subsequent vomiting was severe, and I believe due to tension on the pedicle and to the distention noticed in the colon as in Case I.

Twenty-four hours after operation she had one grain of calomel every hour until eight grains had been given. Nutritive enemata and flatus tube used. More calomel was given and simple enema; but this proved ineffectual, and vomiting and distention continued. Pulse 80, temperature $99\frac{1}{3}^{\circ}$, respiration 26. She had nineteen enemata altogether to open the bowels, besides numerous nutritive ones at a later and earlier date. Champagne given by enema. Face flushed. Cold perspiration. Vomiting incessantly. In all she must have vomited about one and a half times the capacity of a patent pail of fluid. It seemed as if the peristalsis had been reversed, though there was no fecal odor to the vomited matter. The vomiting was at its worst on the third and beginning of the fourth day. At 6 P.M. on the fourth day the first mouthful was retained, and from this time on the vomiting ceased. Respiration fell to 20 and 18, pulse remained about 80 to 90. Temperature about normal until sixth day, when it rose to $101\frac{1}{3}^{\circ}$; it dropped again in twenty-four hours to normal. The clamp was taken off on the nineteenth day. No drainage tube was inserted. Sloughing tissue behind clamp removed by dressing forceps. A large hole, into which I several times passed the full length of my first finger, remained and closed gradually. On the 8th of July, one month after the operation, one of the broad-ligament ligatures was removed from the hole, and two weeks later a second one came away.¹ Patient is now able to move on the lounge and is rapidly gaining strength. This case brings up the question, How should we proceed when abdominal tumors are complicated by pregnancy? I intend making this the basis of a paper for the meeting in September of the American Association of Obstetricians and Gynecologists, and hope the discussion of the paper will throw some light upon the subject.

CASE IV.—*Uterine myoma of about ten pounds; the attempt to remove ovaries and tubes was, by the force of circumstances, superseded by hysterectomy; recovery.*—M. C., æt. 34. Sent by Dr. Wilson. Has had one attack of very severe menorrhagia. Consulted Dr. Wilson, who discovered a tumor the

¹ Another broad-ligament ligature arrived yesterday by mail (August 19th, 1891), having come out of the hole made by the pedicle.

size of a man's head, and brought her to me for my opinion. I agreed with his diagnosis of soft myoma, and felt sure that it was connected with the uterus. There could be no doubt that the tumor was increasing in size. Advised removal of ovaries and tubes as a first resource.

Operation.—Chloroform by Dr. Davidson. Assistant, Dr. Machell. On opening abdomen I found a large, edematous myoma. As feared before operation, I found a large incision above the tumor and much handling necessary to effect removal of ovaries. The right ovary had been felt prolapsed and probably imprisoned before operation, and I had *carte-*

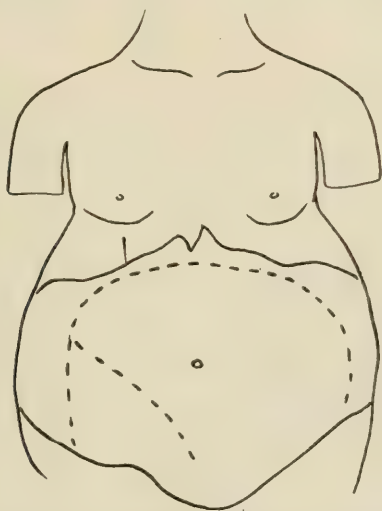


FIG. 4.—Large area within broken lines gave dulness with no fluctuation; small area fluctuation; outside of broken lines there was bowel resonance.

blanche from the patient to do whatever I deemed advisable. After a great deal of difficulty I managed to tie and remove the right ovary (the one prolapsed) and part of the right tube. The left ovary and tube I removed first. It seemed madness to put a ligature on such a round, convex surface, because it must surely slip off after a few hours. Blood oozed from the surface of the much-handled and much-pressed tumor; and having seen a case in the practice of a confrère die only a few weeks before—where the same difficulty existed, the same amount of handling was required, and the tumor left behind—I determined to take out the whole mass.

This was rapidly done, as described in the other cases, clamp put on, pins inserted, wound closed, and stump dressed. Patient did well for about a week. A drainage tube was put into the cul-de-sac of Douglas, and taken out on third day.

On the seventh day the temperature rose to 103° , pulse 90, respiration 24. Pain over the abdomen; distention. At

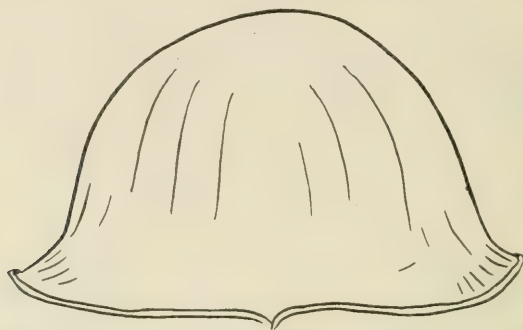


FIG. 5.—Diagram showing large, smooth tumor with tense broad ligament running off from either side.

once purged. Distention diminished, and temperature fell. Clamp removed by scissors on the eighteenth day. Patient then looked as if in the third week of typhoid fever. A small piece of tissue, as thick as a match, had to be cut through before the pedicle could be removed. This seemed alive, but

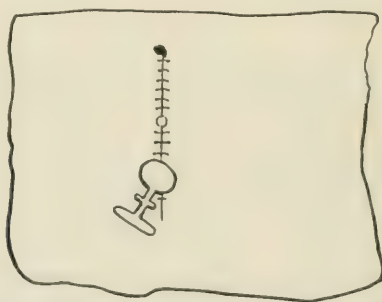


FIG. 6.—Shows drainage tube, pedicle, and clamp.

sloughs of tissue were to be seen around it. It had no sooner been cut than it bled profusely, necessitating a silk ligature. One of the ligatures applied to the broad ligament welled up with some pus from the side of the granulating hole, as hap-

pened in Case III. Patient is now, a month after the operation, able to sit up.

And now, if you will bear with me for a moment, I will outline what I believe will be the operation of the future. But, before doing so, I would like to digress for a moment. My belief in the frequency of the old-fashioned shock is not deeply rooted. Shock following these abdominal operations generally means hemorrhage, or the effect of the prolonged manipulations of those who are not familiar with the abdomen, or are so slow in their surgical ways that they should never undertake such cases. The abdominal surgeon should always think and act for himself. Two golden rules apply to abdominal surgery—rapidity of execution and accuracy of detail.

Ligatures more frequently slip off the pedicles of novices. Septic deaths only occur in the practice of the careless, or of those surrounded by those who are careless. No nurse is allowed to even touch a drainage tube in the belly of a patient of mine, unless she has washed her hands. Every drainage tube and sucker is heated red hot in a Bunsen burner flame before it is used again for another case. Every thread, every instrument, every piece of rubber is boiled, my hands and the hands of my assistant are clean, and any other hands around are clean, no post-mortem or dissecting-room attendants are admitted, and the nurse who handles the sponges is not allowed to handle vomited matters and lift around tables after her hands are cleansed. And thus we keep the septic material out of the peritoneal cavity, and I pull and tear and handle this membrane with perfect comfort. The temperature after the most severe operations runs an almost normal course. The silkworm-gut ligatures are a boon. They produce less irritation than silk. I left them in the abdominal wall of a dog until they became completely buried, and that without any pus formation. The peritoneum is a wonderful membrane, and, when I have once closed it, I do not bother with iodoform, or bichloride, or any other germicide. If the germs of septic infection are not already inside before the peritoneal surfaces are approximated, your patient is safe from septic peritonitis; and if they are inside, all the foul-smelling powders the chemist can supply us with will do no good. I

know that this is so. My operations of the most severe nature, done in the theatre of the Toronto General Hospital, speak for themselves. Every care is taken to cleanse everything that can carry such germs inside of the peritoneum; none are allowed around the operating table and instruments, except those immediately occupied; the operations are done as rapidly as possible, and every case has recovered, with one exception—opening and washing out the abdomen of a case of late gonorrheal peritonitis, where ovaries and tubes and portions of bowel were in a gangrenous condition and the patient almost *in articulo mortis*.¹ In ordinary cases I use nothing over the wound but absorbent cotton pads in gauze; no iodoform, boracic acid, or other chemical is put near the wound.

But let us go on one step further. When we have a gangrenous pedicle lying over a cavity lined by such a peculiarly offensive and defensive membrane as the peritoneum, we must take precautions necessary now, but superfluous before, and protect the intervening granulating wound surrounding the pedicle from the malignant potency of these germs of putrefaction. And we must also use remedies to prevent or retard such putrefaction. With such precautions this terrible operation of abdominal hysterectomy can run a perfectly aseptic course and the death rate can be kept down. I dread this operation, and feel tempted to try some of the other methods that have been thought out, but return again to the one described when the critical time comes. I am not, on account of the difficulty encountered in the form of hemorrhage (and one must remain within easy call of his cases, knowing that they may bleed morning, noon, and night, though he tightens the clamp with his own experienced hands to the verge of cutting)—I am not, on this account, in favor of sinking the stump, as done by some, between the edges of the wound in the abdominal wall, suspended by threads, ready for upheaval if hemorrhage occurs.

I have thought of various methods of dealing with these

¹ These operations have been done in the theatre, not from choice or the love of the extra vigilance required, but from necessity, owing to alterations in the buildings of our woman's department. In this department we have a special theatre for such operations, and nothing very septic comes into this theatre.

tumors. The great difficulty before us, in the abdominal hysterectomy of to-day, is the separation of the extra-abdominal pedicle. After many years the extraperitoneal pedicle of ovariectomy was replaced by the intraperitoneal pedicle, the one now generally adopted. But two facts preclude the possibility of such a treatment for myomata, namely, the impossibility of controlling hemorrhage by ligating the stump, and the danger of necrosis of the pedicle on the proximal side of the clamp wire when formed of myomatous tissue. This hemorrhage occurs with the extraperitoneal wire clamp; this necrosis also occurs with the extraperitoneal wire clamp. We must therefore give up all ideas of any new treatment in this

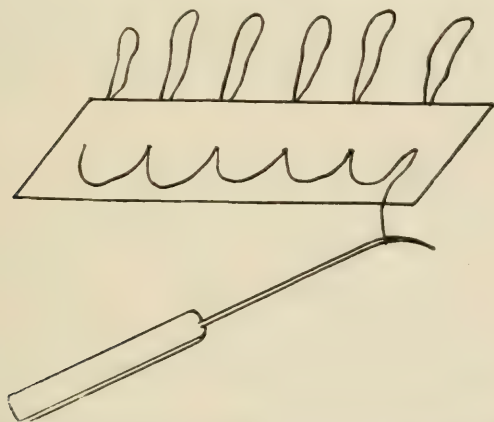


FIG. 7.—Scheme of loops. Short loops are on vaginal surface.

direction. One line alone remains: a return to, and an improvement of, the old "Freund's" operation. I have more than once determined to carry out the following procedure, but have each time backed down when the time came to operate and have proceeded in the old way.

The operator begins by personally disinfecting the vagina with a 1 : 500 solution of bichloride of mercury, so strong that it coagulates the albumen of the superficial epithelial cells. He provides himself with a long thread of strong and tried silk well boiled, threaded in the eye of a sharp-pointed, blunt-edged perineum needle. This needle should be firm and only slightly curved, and should have a longer handle than usual. He should practise the stitch on a piece of chamois leather

previously, so that he can, without hesitation and without bungling, run a chain suture. The operation is now performed in the usual way by tying off the broad ligaments, putting on the temporary rope clamp, removing the tumor, placing a pedicle pin in situ, and adjusting the temporary wire clamp. The rope clamp is then removed and the pedicle rapidly trimmed down to the limit of safety. The assistant can now readily control what is left of the uterus, and can draw up on it and bring the cul-de-sac of Douglas well in view, or hold it upward and backward and bring the utero-vesical pouch well in view, or draw it to either side to enable the operator to outline the ureters on the opposite side. Now there is tissue lying close around the cervix, separating the vaginal cavity from the abdominal cavity, that can be readily compressed by hand-tied ligatures—tissue that is not edematous and therefore not

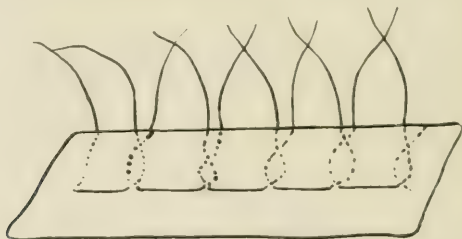


FIG. 8.—Loops cut and ready for tying. Dotted lines show where crossed.

likely to shrink. The perineum needle can now be accurately carried up from the vagina along and close to the clamp-steadied pedicle, to emerge just below the wire of the clamp into the abdomen. One end (the short one) of the thread is now drawn out far enough to leave a good tying end, and the needle still on the thread is withdrawn and again lost sight of in the vagina, only almost instantly to reappear one-half inch further to the right. The thread in the groove (whether the front groove or back groove of the needle) occupied by the short end at the last puncture, and now corresponding to the short end, is withdrawn in a loop long enough to leave two good tying ends of equal length, when the loop is cut and the needle is again sunk into the vagina, only to reappear as before. In this manner the whole cervix is surrounded by a chain suture exactly similar to the one I applied to the broad

ligament of Case I. This chain suture cannot wound the ureters, if made to hug closely uterine tissue until it emerges just below the wire clamp. The tying loops are now all in the abdomen and the compressing loops are all in the vagina. Each thread is crossed with its neighbor to interlock, and the last loop tied is the most important and should be tied very tightly. After the loops are all tied no bleeding can take place from the stump, and to demonstrate this fact I believe that it would be well to loosen the wire clamp. If it bleeds, the tying is faulty and must be done over again. No cutting should be done to remove the remaining cervix until this is demonstrated. When satisfied, the cervix can easily be removed by means of a sharp, short-bladed scalpel. I should think the incision should follow the track of the clamp, and should slope downward and inward toward the known position of the vaginal and cervical junction.

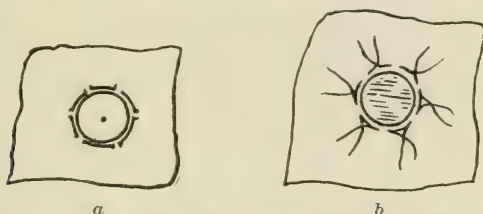


FIG. 9.—Cervix surrounded. *a*, under or vaginal side; *b*, looking down from abdomen

During this procedure the bowels must be kept either up in the abdomen or on the abdomen by large, flat, warm sponges. A short sound in the bladder could readily drag it up out of danger. The peritoneal edges, from between which the cervix has just been cut, should be held together with two or three stitches, the vagina packed with iodoform gauze, the abdomen closed, and the wound dressed in the usual way.

If this operation can be carried out there is no reason why it should be accompanied by any greater immediate danger than the other, and the remote danger, so great after the operation in which the gangrenous stump is left behind, would be almost *nil*.

My reason for bringing this before you is to gain other ideas and hear criticisms. We have as yet no satisfactory method of doing abdominal hysterectomy. To experiment

on the cadaver is unsatisfactory for two reasons: first, the tissues have lost their natural elasticity and pliability; and, secondly, the relations of the parts are altered, owing to the absence of a tumor. Such an operation as I have outlined would have been impossible in Case II., but could very readily have been carried out in Cases III. and IV. During the operation on Case III. my assistant, who has seen a large number of abdominal operations, made the remark that he had never seen the cul-de-sac of Douglas so beautifully de-

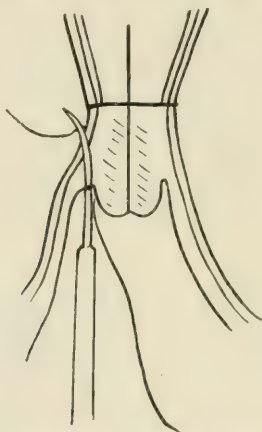


FIG. 10.—Showing method of passing ligature.

monstrated before. The demonstration was purely accidental during the forward elevation of the pedicle to allow of sponging of the cul-de-sac.

If such an operation can be done it will have an ever-increasing field, provided that it lowers the mortality and lessens the severe illness accompanying the present extraperitoneal or "uterine-stump" operations. In cases without severe adhesions, done early, in young women of 20 to 40 who have ever-increasing tumors occasioning ill health and great discomfort, the tumors filling the abdomen like a five or six months' pregnant uterus, this operation should have but a slight, if any, increase over the mortality of vaginal hysterectomy. In practised hands vaginal hysterectomy has a mortality of six to eight per cent. The risk occasioned by a second cut through the peritoneum cannot be great. In vaginal hysterectomy the abdomen is opened, and in such a combined

abdomino-vaginal operation we have simply the superadded abdominal incision and a little more handling of the peritoneum.

Abdominal hysterectomy of to-day is only done late in the disease, owing to the dread the surgeon has of submitting his patient to such a great risk. This was so a few years ago in cases of ovarian tumor. To-day we find a small ovarian tumor, and advise its immediate removal, and, therefore, our difficult cases of ovariectomy are the neglected cases. With abdominal hysterectomy all the cases are the neglected and obstinate cases; and this should be so until we can hold out to the patient a positively curative and slightly dangerous procedure. A sloughing pedicle resting on an abdomen is to me like a lighted torch flaming over a powder magazine. It is unsurgical, and we may surround the torch by water, as the pedicle with germicides, and the danger, though diminished, is still present. And what a relief of mind the surgeon feels when the stinking, dirty thing has come away! To appreciate this feeling one must have experienced it.

OVARIOTOMY DURING PREGNANCY.¹

BY

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It would seem strange to bring this important subject before the Society with only one case as an illustration. I do not pretend to bring forward anything new or anything of my own in this connection, but merely desire to present to the Society the thoughts and reflections that I experienced after looking over the literature on the subject. This has been the more interesting to me because of the radical changes in the views as to the choice of treatment of this condition which have taken place within the last ten years.

CASE.—Mrs. G. E., 30 years of age, primipara. Health always good up to the time of this sickness; she had never

¹ Read before the Chicago Gynecological Society, May 22d, 1891.

been treated for any uterine disease. First menstruated at 14. Until the nineteenth year she was occasionally troubled with frequent and profuse menstruation. From the nineteenth to the twentieth year the menstrual flow was regular, but scanty. After the twentieth year it again became normal, and continued so until the time of last menstruation, May 21st, 1890.

She was married in 1886 at the age of 25, and was well from that time until pregnancy, with the exception of some attacks of pain in the lower part of the abdomen, radiating from the lumbar to the inguinal regions. The pain would come on suddenly, had no connection with menstruation, would last from fifteen minutes to half an hour, and would be followed for several days by tenderness over the lower part of the abdomen. She generally felt chilly during these attacks, but had neither fever nor vomiting. She has had five attacks in all: the first one five years ago, the second a few days later, the third a month later, the fourth a year after the third, and the last attack during January, 1890. Dr. Hartman, her family physician, to whom I am indebted for the information as to her previous history, considered these attacks to be ovarian colic. She consulted Dr. Hartman on July 26th, 1890, when she complained of failing health, general weakness, loss of appetite and flesh, having lost sixteen pounds within five weeks. She further complained of pain and considerable tenderness in the left inguinal region, and had not menstruated since May 21st.

On bimanual examination the uterus was found slightly enlarged, mobile, and pushed over to the left side by a tumor which partially filled the pelvis minor. It did not appear to be firmly adherent to the uterus. An upper portion of the tumor projected above the brim of the pelvis in the right lower part of the hypogastric region. It appeared movable. The surface, although smooth, was not uniform in appearance, inasmuch as the portion in the large pelvis appeared to be solid, while the portion felt through the vagina was elastic and appeared to fluctuate. Dr. Hartman made a diagnosis of dermoid cyst, and this diagnosis was confirmed by the examination October 24th, 1890. The gravid uterus was now found projecting in the hypogastric region, the size of the uterus of

the fourth month. Auscultation revealed uterine bruit, but no fetal heart sounds. The tumor had also increased in size, and on examination was found to almost fill the pelvis minor. The wall was in some parts hard and nodular. The upper part could now be only indistinctly felt, as it was covered by the gravid uterus. The patient had not felt any fetal movements, but had had frequent shooting pains in the mammæ, which as yet were not enlarged or changed in appearance. Her general health had improved during the summer.

October 24th I examined the patient in consultation with Drs. Hartman and Lee, and confirmed the diagnosis of dermoid cyst in the small pelvis on the right side of the uterus, and pregnancy of the fourth month. The ovarian tumor was immovably fixed in the small pelvis, and the vaginal portion of the uterus could now be felt high up to the left side and apparently movable against the tumor.

In consultation held as to what course to pursue, it was thought likely that this ovarian cyst, which almost filled and was incarcerated in the small pelvis, might be a dangerous complication to the delivery, or might rupture later on in the course of pregnancy. After considering the choice between the induction of premature labor and subsequent ovariectomy on the one hand, and ovariectomy during pregnancy on the other hand, the latter was decided upon, and the patient taken to the Emergency Hospital and prepared for laparotomy in the usual manner.

October 30th, in the presence of the doctors from the Polyclinic and some of my students from the college, and assisted by Drs. Bernauer, Lee, and Hartman, the anæsthetic being administered by Dr. Rosa Engert, the operation was performed as follows :

An incision was made in the median line from the symphysis pubis to the umbilicus, the pyramidal muscle transversely divided, and the parietal peritoneum sutured to the skin. The gravid uterus presented through the abdominal wound, and the tumor could be felt deep down and behind the uterus, but was inaccessible until the incision had been prolonged above the umbilicus to midway between the latter and the ensiform cartilage.

On introduction of the left hand into the abdominal cavity,

a cyst could now be felt of the size of a small child's head, the lower part of the tumor filling the small pelvis to the right of and behind the uterus, an upper portion projecting up into the pelvis major. The cyst was so firmly incarcerated in the small pelvis that it could not be removed so as to bring it up into the wound. As I expected to find a dermoid cyst, I did not want to empty its contents in order to facilitate its removal. Therefore I enlarged the abdominal incision still a little further upward, and everted the gravid uterus out through the wound. The uterus was wrapped in warm aseptic cloths soaked in sterilized water, and was held on the side of the abdominal cavity and to its left side by Dr. Bernauer.

I now introduced the left hand down into the small pelvis behind the cyst, and lifted it up and out through the abdominal wound. It was found to have a smooth surface and to be non-adherent. After having packed the abdominal cavity around the pedicle, the cyst was removed entire. It was somewhat difficult to ligate the broad ligament, as the pedicle was short, especially in the upper part of the broad ligament, which was unfolded and filled by the gravid uterus. The pedicle was transfixed and then dropped, without, as I usually do, dividing it on the clamp by Paquelin's cautery, because the pedicle was too short to permit the application of the clamp. After dropping the pedicle the cloths around the uterus were removed, and, after turning the patient on the side, a pitcher of sterilized water was poured over the uterus, which, after the removal of the large flat sponges, was replaced. It was somewhat difficult to push the uterus back through the wound, the borders of which had to be tightly drawn during its replacement. Several small, subserous ecchymoses had formed on the surface of the uterus during its stay outside. Small sponges on sponge holders, pushed down behind the uterus, showed the abdominal cavity to be free from blood and serous fluid. The abdominal wound was then united with alternate deep and superficial sutures; no drainage.

At the end of the operation, which lasted an hour and a quarter, the patient was in natural condition; pulse 90, strong; no symptoms of collapse.

The second evening after the operation temperature rose to 100.8°, pulse to 96. During the rest of the first week after the operation the morning temperature did not reach 99°, the evening temperature being about 99°. During the second week morning temperature was normal, the evening temperature about 99°. From the beginning of the third week the temperature remained normal.

During the first two weeks the only important symptom was occasional severe paroxysmal pain, simulating uterine contractions; it could, however, be controlled by repeated hypodermic injections of a quarter of a grain of morphine. This pain made me fear impending abortion, but it gradually decreased, and entirely ceased at the beginning of the third week.

On the fifth day the dressings were changed and the wound found to be perfectly dry and aseptic. The patient was sitting up at the end of the third week.

The subsequent course of the pregnancy was entirely normal, and on February 19th, 1891, the patient fell in labor, which lasted fifteen hours, the child being delivered by forceps. The child was fully developed, at full term, and weighed six pounds. The convalescence after delivery was not attended by fever, but was somewhat tedious. The patient had only a small quantity of milk, and so after three weeks artificial alimentation was tried, but proved injurious to the child. A wet-nurse was then procured, after which the child recovered and is now doing well. The mother regained her strength slowly but fully; she suffered for a time, however, from looseness of the bowels and indigestion.

In the cicatrix at the line of incision and at the point of insertion of the sutures a remarkable degree of pigmentation took place. Dr. Hartman stated that the entire cicatrix became deeply pigmented—in fact, almost black. The patient herself declared that this pigmentation did not begin to appear until after labor (?). It reached the maximum degree of color after delivery, from which time it began to fade, and at the end of nine weeks had almost disappeared, leaving only a light-brown cicatrix.

The tumor was a dermoid cyst with the usual characteristics of such tumors. At the time of removal it was about

the size of a child's head at term ; it now appears considerably smaller on account of the shrinking of the cyst wall in the alcohol. The outer surface is smooth, free from adhesions, but uneven ; in some places thin, in others consisting of hard, nodular tumors from a quarter of an inch to an inch in diameter. One portion of it forms a solid mass the size of a small hen's egg, which consists of whitish solid tissue and includes a cyst, the size of a walnut, densely packed with brownish hair. On the inner wall of the larger cyst, which is smooth in its upper portion, may be seen, down near the large tumor, a number of smaller cysts from the size of a pea to that of a hazelnut. In some places the cyst wall is quite thin and transparent, indicating the liability of rupture upon manipulation or by pressure during delivery.

Remarks.—Ovarian tumors, which are at all times a source of danger, are still more so when complicating pregnancy, as the two conditions when in combination mutually influence each other, to the detriment of both mother and child. The ovarian tumor is subject to acceleration of growth, to more rapid development, during pregnancy. The gravid uterus is liable to cause torsion of the pedicle by changing the form and position of the latter, or by circulatory disturbances in the pedicle, resulting in gangrene or perforation of the cyst. When situated in the pelvis minor, an ovarian tumor is especially liable to become an obstacle to the delivery of the child, and to cause difficult and consequently dangerous labor which may result fatally to both mother and child.

In discussing the measures for the prevention of these dangers, we will first consider the fate of the mother and child when the pregnancy is left to run its course. The dangers to the mother, as gathered from the statistics, are the following : Litzmann has collected fifty-four cases, with twenty-four maternal deaths ; Jetter, two hundred and fifteen deliveries in one hundred and sixty-five mothers, with sixty-four deaths ; Playfair, fifty-seven deliveries, with twenty-three deaths ; Braxton Hicks, six deliveries, with no deaths ; Rogers, five deliveries, with no deaths ; Spencer Wells, eleven deliveries, with one death ; Fritsch, four deliveries, with one death. In all three hundred and fifty-five deliveries are reported, with

one hundred and thirteen maternal deaths, or a maternal mortality of about thirty-two per cent.

The mortality to the children from either abortion or premature labor, according to Engström, is much greater. In a series of two hundred and sixteen cases a mortality is reported of forty-eight per cent.

The proliferating cystoma is the form of cyst most commonly observed. They are frequently located outside of the small pelvis, and are often overlooked during pregnancy. They rapidly increase in size, and may cause over-distention of the abdomen and severe pressure symptoms from the organs of the abdomen and thorax, necessitating speedy relief. In such cases the treatment by puncture comes in question. As these cysts are located outside of the small pelvis, they are not liable to prove a serious impediment to delivery. Thus it would seem that small dermoid cysts located in the pelvis minor constitute the gravest complication of ovarian tumors with pregnancy.

Dermoid cysts are common. Jetter found thirty-seven dermoid cysts in one hundred and sixty-five cases. They are often small, and thus remain in the pelvis; are easily diagnosed by vaginal examination, and therefore, as Olshausen states, are seldom overlooked. These are the tumors which most frequently prove a serious difficulty at the time of delivery, when immovably incarcerated in the pelvis minor.

Puncture of the dermoid cyst is dangerous, as its contents are more poisonous than those of most of the other ovarian tumors; but puncture becomes unavoidable at the time of delivery when the cyst cannot be pushed out of the way up into the abdominal cavity. The usual location of dermoid cysts in the pelvis minor makes liable the occurrence of spontaneous rupture during delivery, with consequent septic peritonitis resulting partially from infection from the contents of the cyst and partially from mixed infection through the puerperal wounds.

Treatment.—While, outside of pregnancy, prompt extirpation of an ovarian tumor is always indicated, widely different measures have been advocated for the treatment of ovarian tumor when complicated with pregnancy.

1. Induction of abortion and premature labor has been

recommended by Barnes, but in most cases this sacrifices the child and is not without danger to the mother. In five cases cited by Olshausen two mothers died. As ovariectomy necessarily must follow, this method of treatment exposes the mother to the dangers of two serious operations.

2. Puncture of the cyst, to relieve the symptoms and so permit natural labor to be undisturbed. This procedure, like the preceding one, is of course only temporary and resorted to with a view of awaiting the earliest opportunity for ovariectomy. Puncture of the ovarian tumor may relieve the dyspnea and prevent abortion. It is not more dangerous in pregnancy than under ordinary circumstances, but the puncture of ovarian tumors in general is attended by a mortality of nineteen per cent. Cohn states that one out of every six ovarian cysts is malignant; therefore puncture might cause rapid diffusion of the malignant tumor in the peritoneal cavity—malignant peritonitis. The more rapid growth of ovarian tumors during pregnancy is apt to cause refilling of the cyst after puncture, and thus necessitate repeated punctures, which, of course, will increase the danger to the mother. Cohnstein states that of six mothers in whom puncture had to be repeated three or more times during pregnancy, five, or eighty-three per cent, died within a short time after delivery from exhaustion. Puncture does not predispose to the interruption of pregnancy in more than eighteen per cent of the cases.

The difficulty in differential diagnosis between an ovarian tumor and the gravid uterus is apt to lead to puncture of the latter. Olshausen states that in seven cases the uterus was mistaken for an ovarian tumor and punctured. The operator then made a Cesarean section, sutured the uterus, and closed up the abdomen. This was done in five cases with success; in two cases the puncture terminated fatally.

3. During the last few years a third method of treatment of ovarian tumors during pregnancy has come into the field, namely, ovariectomy during pregnancy. This operation is comparatively new, as in 1877, according to Olshausen, only fourteen cases were on record. In the next year over forty cases were on record, and now this method of treatment bids fair to become a regularly established procedure. Although

ovariotomy in the pregnant woman was at first performed with a good deal of apprehension, it has been seen from the very beginning that the dangers were highly overrated, and that the mortality for mother and child has been decreased by this operation far beyond our expectations. In 1886 Olshausen collected eighty-two cases with only eight deaths; but he points out that individual operators had a much lower mortality, as out of thirty-six cases operated upon by Lawson Tait, Spencer Wells, and Schroeder, only one mother died.

Engström, in 1890, reported a series of forty-eight cases with only two maternal deaths, or a mortality of four and two-tenths per cent, as follows: Schroeder, twelve cases, no deaths; Lawson Tait, eleven cases, one death; Spencer Wells, ten cases, one death; Olshausen, eight cases, no deaths; and Engström, seven cases with no deaths.

I consider the mortality of the operation to-day to be below five per cent; therefore ovariotomy during pregnancy is not any more dangerous than this operation in the non-pregnant condition.

The fate of the child is influenced by this operation to a like favorable degree. According to Olshausen, abortion follows ovariotomy in only twenty per cent of the cases; hence eighty per cent of the children were born at full term. When we compare this with the mortality to the children of forty-eight per cent with non-interference, we see that by ovariotomy twenty-eight per cent of the children are saved.

It is generally thought, and probably it is true, that the earlier in pregnancy an ovariotomy is performed the more favorable is the result. Wilson states that ovariotomy becomes less favorable after the fifth month, because, as Schroeder has pointed out, the operation becomes more difficult by shortening of the pedicle, on account of the unfolding and filling-in of the broad ligament to which the tumor belongs by the gravid uterus. Late in pregnancy the size of the uterus naturally makes the operation difficult by decreasing the available operating space in the abdominal cavity. This sometimes necessitates the inconvenient lateral operation to gain access to the ovarian tumor. The vascularity of the tumor and pedicle late in pregnancy always increases the difficulty of the operation. But in such cases the facts have

proven a surprise to our expectations. Olshausen reports twenty-one cases operated upon after the fourth month, with only two deaths. Pippingsköld reports an operation made after the commencement of labor which resulted successfully. Stratz reports fourteen operations performed by Schroeder, with no maternal deaths and with twelve living children, and formulates the answer to the question whether ovariectomy should always be performed during pregnancy, that it should be done as soon as the diagnosis is made, because :

1. Ovariectomy is inevitable, and its prognosis is not aggravated by the presence of pregnancy.

2. Delivery in childbed without the tumor has a much better prognosis than when the tumor exists.

3. One out of six tumors is malignant, contra-indicating puncture.

4. Prognosis for children is much better.

He formulates the following conclusion : " The complication of ovarian tumor with pregnancy indicates ovariectomy."

In the discussion which followed the reading of this paper Veit and Löhlein protested against laying down absolute rules, and suggested that it might be well to individualize. Schroeder, however, fully supported Stratz's recommendation always to operate.

Final Remarks.—Small tumors in the pelvis minor are especially dangerous to the child and mother, as has been well illustrated in a case published by Lomer, in which, in a secundipara 21 years of age, who had an ovarian tumor in the small pelvis the size of a child's head, after rupture of the bag of waters extraction by the foot was tried in vain. Prolapse of the umbilical cord and death of the child resulted, followed next day by version in narcosis, during which the child's head was torn off, and the patient died from collapse in three hours.

In another case, published by Nölting, a small ovarian tumor in the pelvis made delivery difficult in the following way : Forceps were first applied in vain ; puncture of the tumor evacuated only a small amount of blood. The child died, and was only extracted after perforation, and still with difficulty, as the tumor came down so far in Douglas' fossa

that prolapse of the rectum took place. The patient died after four days, of peritonitis. The autopsy showed a double twist of the pedicle, with rupture of the cyst.

Instances of this kind on the one hand, and the low mortality of ovariectomy during pregnancy on the other, would tend to lead to the conclusion that in small ovarian tumors located in the small pelvis and diagnosed during pregnancy immediate ovariectomy is the safest procedure.

BIBLIOGRAPHY.

- OLSHAUSEN : Die Krankheiten der Ovarien, p. 129.
 STRATZ : Ueber der Complication der Tumoren und Gravidität, Zeitschr. f. Geburts. und Gynäkologie, Band xii., Heft 2, p. 262.
 ENGSTRÖM : Annales de Gynécologie, October and November, 1890.
 COHNSTEIN : Volkmann's Sammlung klinischer Vorträge, No. 59.
 LOMER : Centralblatt für Gynäkologie, No. 42, 1890.
 NÖLTING : Ibid.

IMPROVED GYNECOLOGICAL INSTRUMENTS.

BY

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(With sixteen illustrations.)

INTRODUCTORY.

WITHIN the past twelve months I have devised and modified a number of instruments, which are described in the following article. Owing to the number of instruments which are of absolute necessity in the gynecological armamentarium, it is of great importance to combine practical utility and directness of purpose with the utmost simplicity. And, again, a certain number of gynecological instruments must, of necessity, be in the hands of the general practitioner for occasional use in cases of emergency. Simplicity in construction is another name for ease in cleansing and securing asepsis, the chief principle to be followed in devising any surgical instrument. I have endeavored to be guided by

these principles in all of the instruments which I have devised and modified.

A MODIFIED SIMS' SPECULUM.

A notable tendency to-day, in making vaginal examinations by means of the speculum, is to employ those especially

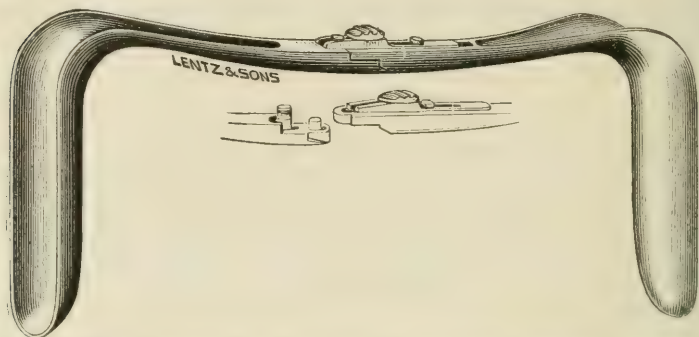


FIG. 1.—Writer's modified Sims' speculum. Lock shown in outline One-third actual size.

adapted for use in the dorsal position. Of these Simon's is the most convenient. Notwithstanding this, however, there remains a certain proportion of cases in which Sims' speculum

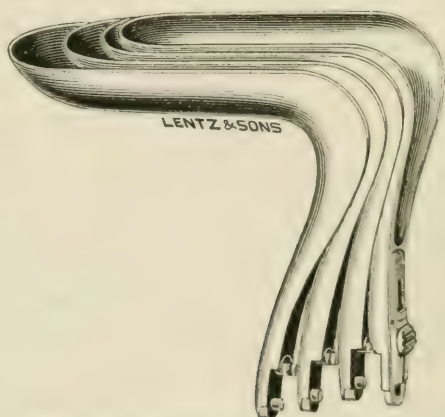


FIG. 2.—Set of blades in nest for transportation.

will always be the most serviceable, in which we must resort to the left semi-prone position.

To obviate the necessity of carrying several sizes of the duck-bill speculum, I have had one constructed with a straight

handle, with two blades of different sizes. The handle is divided in the middle, and the half attached to the smaller blade is provided with a thumb slide similar to that commonly found in the ordinary bulldog forceps of the pocket case; at the end of this are two holes, into which two pivots fit firmly and snugly. These pivots are found on each one of a graduated series of blades. The anterior pivot has a shoulder upon which the slide rests on being pushed forward (Figs. 1 and 2).

The special advantages offered by such a speculum are:

1. It renders available several sizes within the smallest bulk, rendering it easy to pack for carrying, and occupying but little space, as the blades fit into each other in a nest.

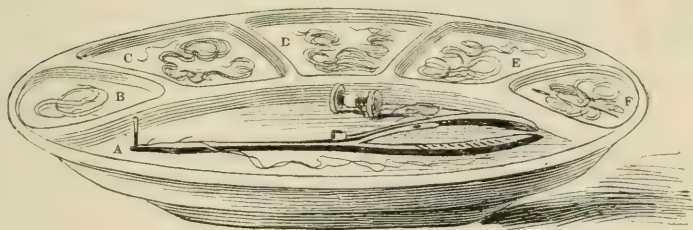


FIG. 3.—Aseptic ligature tray.

2. The lock can be easily cleansed, and by means of sterilization can always be made thoroughly aseptic.

3. It is cheaper than the same number of separate specula.

After constructing my speculum I discovered in Courty's book (edition 1883), "A Practical Treatise on the Diseases of the Uterus, Ovaries, and Fallopian Tubes," page 139, figures of a speculum made by Charrière, called the "duck-bill speculum, for the operation for vesico-vaginal fistula by the American method." This speculum is, in many respects, similar to the one that I have had constructed independent of any suggestions.

AN ASEPTIC LIGATURE TRAY WITH COMPARTMENTS.

Having long felt the need of a tray for classifying ligatures and needles, I have finally, with much satisfaction, adapted this dish as meeting all requirements. By means of this, ligatures of five different sizes can be kept entirely sepa-

rated; it is also valuable for separating the glass spools carrying the different grades of ligatures wound upon them, thus placed in the several compartments, as shown in the diagram (Fig. 3). The largest space in the tray is adapted to hold the needle holder along with the threaded needles used as carriers. If many of these are used they may be kept separate by winding the long loops on glass spools (Fig. 14). The smallest compartments at either end of A (Fig. 3, B, F) can be used for the supply stock of needles liable to be wanted. C, D, and E in the same figure are used to separate ligatures of various sizes, whether loose and lying at length or wound on spools.

This tray has thus proven itself a most practical invention. It is made of porcelain, in one piece, and can be easily cleansed and made thoroughly aseptic. Furthermore, it is handily carried and inexpensive. The circumference of the dish is 95 centimetres ($37\frac{1}{3}$ inches), the depth 3 centimetres ($1\frac{1}{8}$ inches), and the weight 1,193 grammes (2 pounds 10 ounces). It has been constantly used with perfect satisfaction for the past nine months in the gynecological clinic of the Johns Hopkins Hospital.

AN IMPROVED LEG HOLDER FOR THE LITHOTOMY POSITION.

Of the many *beinhalter*, or leg holders, devised, some possess more practical application than others. The one which I wish to describe is particularly useful on account of its simplicity, cheapness, and ease of application; and also because it can be easily cleansed and sterilized, and is so easily carried.

This leg holder is a modification of, and an improvement upon, that described by Dr. H. A. Kelly in the *Medical and Surgical Reporter*, June 11th, 1887, which consisted of three pieces—a sling for each leg, and a band passing around the neck and drawing the legs up by its attachment to the slings.

The leg holder I have devised is made of unbleached canton flannel, 3 millimetres (one-eighth inch) thick, which gives it sufficient body; this is closely hemmed around the edges and also by diagonal stitches running its entire length. The length is 158 centimetres ($62\frac{1}{4}$ inches). For 60 centimetres ($23\frac{5}{8}$ inches) of its length—from the tip on either side

—it is 7 centimetres ($2\frac{1}{4}$ inches) wide, except for a distance of 12 centimetres ($4\frac{3}{4}$ inches), where it begins to taper off, being 3 centimetres ($1\frac{1}{8}$ inches) wide at the extremity. The remaining distance, 38 centimetres (15 inches), is 6 centimetres ($2\frac{3}{8}$ inches) wide. At 49 and 57 centimetres ($19\frac{1}{8}$ and $22\frac{1}{4}$ inches) respectively from the end are fastened metal rings. These rings have an outside diameter of 3.5 centimetres ($1\frac{3}{8}$ inches); they are held by a tape 3.5 centimetres ($1\frac{3}{8}$ inches) long and 4 centimetres ($1\frac{2}{3}$ inches) wide. The leg holder weighs 170 grammes ($5\frac{3}{4}$ ounces). To the rings a

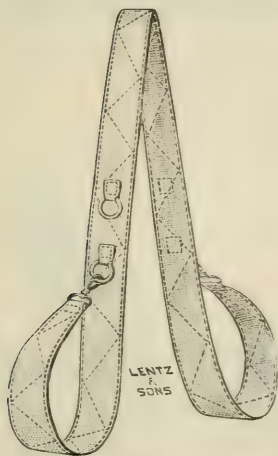


FIG. 4.

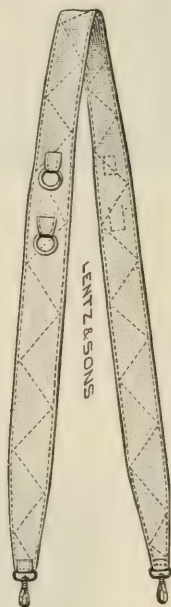


FIG. 5.

FIG. 4.—Leg holder. Showing its position when applied.

FIG. 5.—Leg holder. Part at bend above encircles neck. Snap-hooks below on ends. Rings seen on one side. The snap is carried under knee, the leg drawn up to the abdomen and held in position by catching hooks in rings.

hook in the end is fastened when in position, which makes a loop that adapts itself to the lower portion of the thigh, just below the bend of the knee. When this *beinhalter* is in position the hooks are external on one side, and on the opposite side they are internal. This then supports the leg evenly and steadily in the "lithotomy position." In applying one end around the leg and forming a loop, the other end should be passed

under the shoulder on this side and over the outer border of



FIG. 6.—Shows leg holder applied. Notice loop made by attaching snap to ring. Notice also that on one side the band passes *over* the shoulder.

the clavicle on the other side; or placed in position around

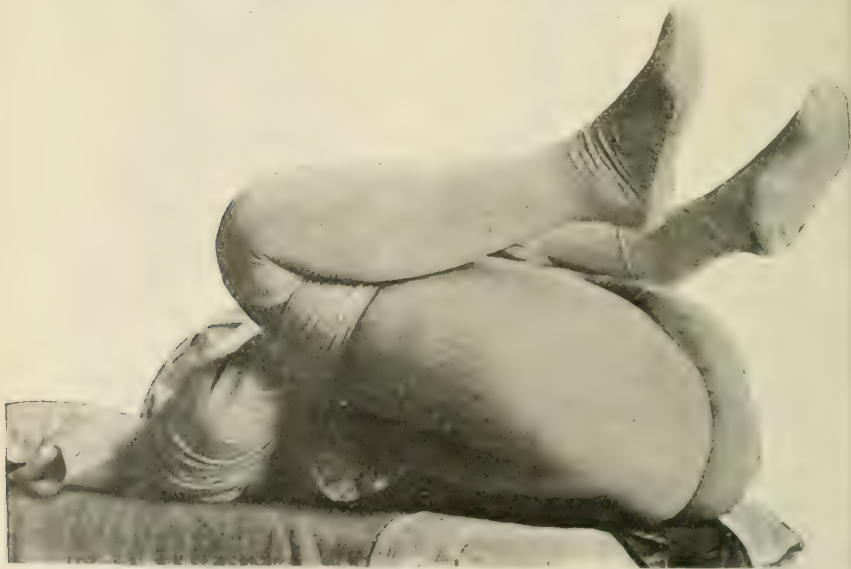


FIG. 7.—Observe the admirable posture of patient for perineal or rectal operations. Notice here that the band passes *under* the right shoulder. Buttocks rest on Dr. Kelly's perineal pad.

the neck and shoulders, and then the loops made for the legs.

It is important to observe the precaution of placing a folded towel under that portion of the *beinhalter* which passes over the clavicle, and to allow the towel to extend up toward the back of the neck, and in this way prevent any undue pressure; also it will prevent that portion about the neck from being twisted into a cord. In adjusting the portion which forms the loop it is necessary to have it even and not wrinkled, to prevent pressure.

From the fact that it can be rolled or folded into a small bundle it is of great value, and takes the place of the ordinary cumbersome leg holder. We use this in all our plastic operations, both for hospital and private cases, and find it entirely satisfactory.

Two or more rings can be placed on either side, and thus the loops can be made larger or smaller, and in this way increase or diminish the length of the *beinhalter*. The distance I have given for the rings we have found to be that most frequently required.

AN ASEPTIC RAZOR WITH CASE.

The razor has now become an essential instrument in gynecological surgery. The razors generally employed have a jointed handle attached, which it is difficult to clean and keep

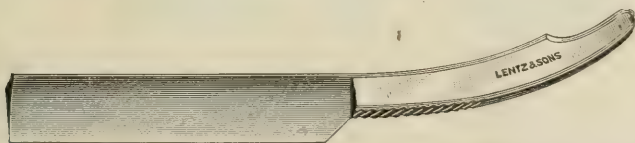


FIG. 8.—Aseptic razor blade and handle, in one piece, of solid metal. Two-thirds the actual size.

free from rust. The one which I have devised and used for the past eight months has proven most satisfactory, as it can be easily sterilized and readily cleaned and dried, and recommends itself for its lightness and ease of manipulation in shaving.

It consists, as the diagram shows (Fig. 8), of an ordinary razor blade with a small, curved metal handle, concave on its upper surface, fitting the little finger: and on the under surface of the handle, near the blade, it is corrugated, to prevent the thumb, which rests on this part, from slipping.

The whole length of the razor is 14 centimetres ($5\frac{1}{2}$ inches). The blade is 7.3 centimetres ($2\frac{7}{8}$ inches) long, and the handle 6.7 centimetres ($2\frac{5}{8}$ inches) long. The depth of the blade is 1.5 centimetres (five-eighths of an inch). It weighs, with case, 75 grammes ($2\frac{1}{2}$ ounces); without case, 45 grammes ($1\frac{1}{2}$ ounces). We have found this very useful for shaving the symphysis pubis and the external genitals. It can be manipulated much better than a razor with jointed handle, and, of course, can be thoroughly and easily cleansed. We carry it in a small wooden box, as shown by the cut, made after the style of a hypodermic case, in which it fits firmly. The case is closed by a clasp. In this way it can be carried with the kit of instruments for an operation, without danger of dulling

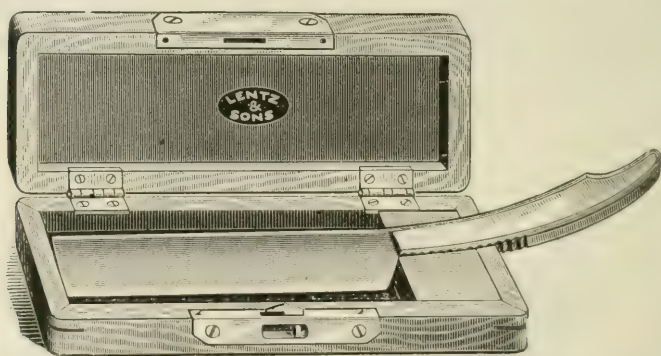


FIG. 9.—Aseptic razor in case for perservation and transportation.

or scratching the blade. When the box is closed the handle projects from the end, as shown by the diagram (Fig. 9). If it is not carried in a box, it may be wrapped in cotton or any soft material, rather loosely wound in order to protect the edge.

ASEPTIC DISSECTING FORCEPS.

Owing to peculiarities in construction, the dissecting forceps in general use are rendered difficult to clean and dry on the inside at the angle where the blades come together. Thus they often become contaminated by infectious material. Another objection to the dissecting forceps is the rough surface on the handles, which it is almost impossible to clean and dry to avoid rusting. Forceps which I have seen without serrations have convex blades, and are thus not handy.

I have my special forceps (Fig. 10), constructed in two sizes: a smaller pair, 14 centimetres ($5\frac{1}{2}$ inches), and a larger pair, 19.1 centimetres ($7\frac{1}{2}$ inches) in length. The widest portion is above, just below the lock of the blades. Here it is 1.3 centimetres (half an inch) in width. The narrowest part is the lower extremity, which is 2 millimetres (one-sixteenth of an inch) in width. They weigh 33 grammes ($1\frac{1}{8}$ ounces) and 48 grammes ($1\frac{3}{4}$ ounces) respectively.

They are made of two blades, held together at the upper end by a French lock 4 millimetres (one-eighth of an inch) from the extreme upper border. There is a small pivot in the middle of one blade, fitting a corresponding hole in the opposite blade, which prevents unlocking or slipping when in

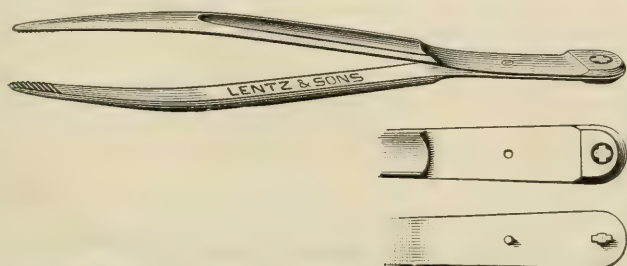


FIG. 10.—Aseptic forceps, separable, with French lock and concave handle. One-third actual size.

use. On the outer side of the handles the surface is concave, facilitating the holding of the forceps.

These forceps commend themselves for their lightness and the slight pressure necessary to keep the blades in apposition. Immediately after operation they are separated, like French lock forceps, washed, and dried.

One pattern of the larger forceps is delicate and tapering, and the other resembles the smaller pair throughout. These are useful in removing cervical and perineal sutures. They are also valuable as dressing forceps, in applying cotton to the cervix or vagina.

Both forceps are in constant use in our clinic, and we find them very convenient.

VAGINAL RETRACTORS.

I have had constructed a set of aseptic vaginal retractors, made of one piece of solid metal, in four sizes—two of each

size constituting a pair. The smallest pair measure 23.5 centimetres ($9\frac{1}{2}$ inches) in length; blade, 6 centimetres ($2\frac{3}{8}$ inches) in length by 2.3 centimetres (seven-eighths of an inch) in width. The largest pair are 24 centimetres ($9\frac{1}{8}$ inches) in length; blade, 8 centimetres ($3\frac{1}{8}$ inches) in length; width of blade, 3.5 centimetres ($1\frac{3}{8}$ inches). The smallest weigh 85 grammes ($1\frac{1}{2}$ ounces), and the largest 102 grammes ($3\frac{1}{2}$ ounces and 45 grains).

They are easily cleansed and conveniently carried, fitting together in a nest. We have found these retractors useful in exposing the cervix for trachelorrhaphy, protecting the lateral vaginal walls from injury by the slipping of the knife or scissors, by pressure, or by accidental wounding by the needle in passing the sutures. They thus often fulfil the requirements of a speculum, but are more adaptable to different

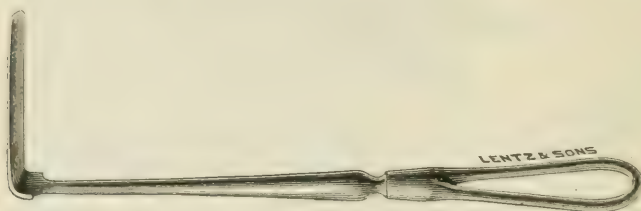


FIG. 11.—Vaginal retractor with longer blade. One-fourth actual size.

angles and changes of position. In cases of vaginal hysterectomy they are of value in elevating the anterior vaginal wall, also in retracting the lateral walls; and in these cases, being lighter than a speculum, and the handle well away from the field of operation, they are specially useful. They can be used in almost any operation in which a speculum is available, and the narrow blade is valuable as an elevator of the anterior vaginal wall in removing the internal sutures after perineorrhaphy. The shorter, broader blade is often of value in retracting one of the lips of the incision in abdominal surgery, affording a view of the pelvic viscera. They are also of value in protecting the surrounding structures in using Paquelin's cautery.

GLASS GRADUATES WITH THERMOMETER ATTACHED.

It is of great practical importance to be able to regulate

accurately the temperature ¹ of the fluids used in the pelvic cavity. By using the jars I have devised, it is possible to avoid placing a thermometer in the vessel each time to ascertain the temperature. *It is also of great importance for the one preparing the solution to avoid the thoroughly inconsistent method of testing the temperature by putting the finger or the hand into the solution.*

These graduates are made of glass, in two sizes, the larger holding one thousand cubic centimetres and the smaller five hundred cubic centimetres. Two centimetres from the top a screw perforates the glass, with a collar on the inside (Fig. 12),

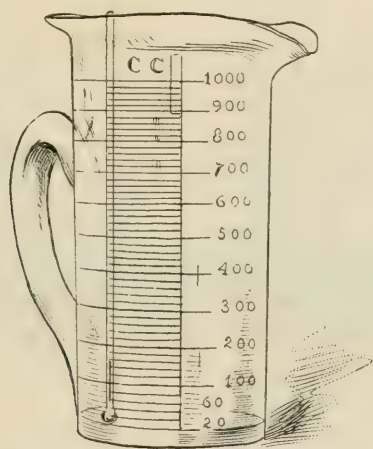


FIG. 12.—Glass graduate with thermometer.

which holds the thermometer in position like a vise, barely resting on the bottom of the vessel. This screw attachment is made either of hard rubber or of metal. If a corrosive-sublimate solution is used to sterilize the graduate, it is better to have the screw made of hard rubber; if, however, only boiled water is used, it is as well made of metal.

We always employ these graduates in irrigating or washing out the pelvic cavity, filling them with a sterilized salt solution, which is then poured into the pelvis. One of the flasks in which we keep the salt solution is boiling and the other

¹ Dr. H. A. Kelly has long insisted on the importance of the temperature of the water used for irrigating in the abdominal cavity, and has settled, after experimentation, on 110° to 112° F. [C. 43.33° + and 44.44° +].

cold. From these we pour the solution into the jars, and observe the thermometer, which can be readily seen as it is placed conveniently near the side of the jar. When this registers 110° or 112° F., we then transfer the solution into the

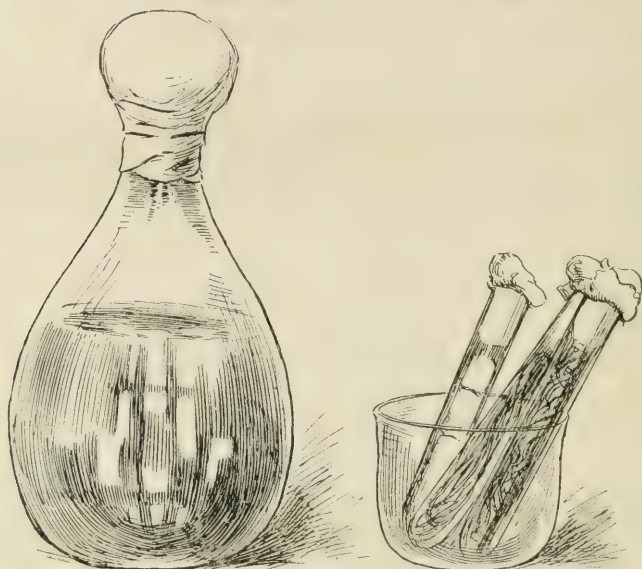


FIG. 13.—Flask holding sterilized salt solution. Also special tubes holding sterilized silver wire, silkworm gut, and gauze for abdominal incisions.

abdominal cavity by pouring or by means of irrigation with the Davidson's syringe with a glass nozzle.

GLASS REELS FOR LIGATURES.

I have devised a series of glass reels differing materially in their shape from those commonly employed (Fig. 14).

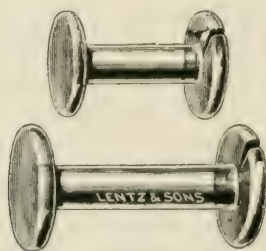


FIG. 14.—Glass reels for silk and catgut. Two sizes.

They are of one piece of glass, solid, with a circular centre bar and a round button on each end. At one end there is a

deep slit or groove, in which the end of the ligature is held fast, in the same manner as in a spool of thread. They are made of different lengths, and fit lengthwise into a test tube,¹ in which the ligatures are placed for sterilization by steam heat (Figs. 15 and 16). When required for use, they are emptied into one of the compartments of the ligature tray.

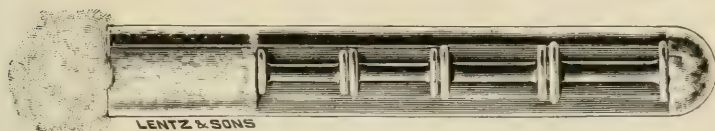


FIG. 15.—Glass tube containing empty reels; cotton in bottom, and stoppered with cotton.

In this way only as many reels as are needed are taken out, and the rest, not being contaminated, can be preserved indefinitely for further use.

The reels are easily cleansed and kept sterilized, and can be



FIG. 16 —Same, reels charged with silk ready for sterilization.

conveniently transported in the glass test tubes for operations at a distance. They also have the merit of cheapness.

We have been employing these glass reels for more than a year, and find them of great practical value.

These articles are made by Messrs. Chas. Lentz & Sons, 18 North Eleventh Street, Philadelphia.

¹ A special form of tube, extra heavy, not liable to break, and without lips, has been devised for this purpose by Dr. H. A. Kelly.

TWO CASES OF FIBROID TUMOR OF THE UTERUS
SUCCESSFULLY TREATED BY WEAK CURRENTS
OF GALVANISM.¹

BY

J. A. LYONS, M.D.

THE following cases, which I have observed while assisting Dr. T. J. Watkins at his clinic in the Chicago Post-Graduate Medical School, may be of interest, as they suffered from profuse and almost continuous metrorrhagia, and as their treatment consisted only in the use of weak currents of galvanism.

CASE I.—Mrs. C., 22 years of age, married four and one-half years; the mother of one child $3\frac{1}{2}$ years old. She miscarried six months ago, at about the fourth month of gestation, at which time she suffered from puerperal septicemia and entered St. Luke's Hospital for treatment. During this time she flowed almost incessantly, and frequently hemorrhage was profuse. She continued to lose blood in this manner until January 30th of this year, when she applied for treatment at the dispensary of the Chicago Post-Graduate Medical School. Her health previous to the miscarriage was good, although her physique is slight and her temperament nervous. She came to the clinic for the relief of metrorrhagia and of pain in the left inguinal region. She was excessively anemic and greatly debilitated.

Physical examination revealed a symmetrical enlargement of the uterus about the size of four months' gestation, which was diagnosed as an interstitial fibroid tumor. The depth of the uterus could not be ascertained, as a probe could not be passed beyond the os internum.

Galvanism was given as follows: 1. Apostoli's clay electrode was placed on the abdomen over the region of the tumor, and to this was fastened the negative pole of the battery. 2. The Apostoli intra-uterine electrode was introduced, but could only be passed to the internal os, and to this was

¹ Read before the Gynecological Society of Chicago, June 19th, 1891.

attached the other pole of the battery. The electricity was now gradually administered until forty milliamperes were given, when the patient experienced some pain. This current was continued for three minutes.

February 3d—that is, four days later—the above treatment was repeated.

February 6th. Patient has had no hemorrhage since last treatment until this morning. The positive pole is again introduced into the uterus and the current increased to fifty milliamperes.

February 10th. No hemorrhage since last treatment. The electrode is easily passed for the first time into the cavity of the uterus for four and one-half inches, and is made the negative pole of the battery. This treatment was repeated on February 13th, 17th, and 20th.

February 27th. She has just completed a normal menstrual period. Fifty-five milliamperes were given. The tumor is reduced to about three-fourths its original size. Her general condition is much improved.

March 20th. The galvanism has been given twice each week, as above described, and now the uterus is normal in size and position; the patient feels perfectly well and is discharged cured. Although the current given was weak and continued for only three minutes, yet at times she suffered so severely after the administration of the galvanism that she was forced to remain quiet in the hospital for two or three hours before returning to her home. About one month later, at our request, she returned to the dispensary feeling perfectly well, and examination again showed the uterus to be normal in size and position. In this case it is interesting to note that the metrorrhagia was cured while the electrode did not enter the uterine cavity.

CASE II.—Mrs. C. P., American, aged 36 years and married eighteen years, has one child 17 years of age. She had two miscarriages fifteen and thirteen years ago. For two years she has suffered from bearing-down pelvic pains and from severe pains in both inguinal regions and in back. Menstruation has been profuse for nearly two years, and has gradually become more painful, until now it is very severe, and for four months she has flowed almost continuously. The blood at times has been bright red and at other times dark and clotted.

Physical examination revealed a fibroid tumor of the uterus about the size of six months' pregnancy, which protruded to the right and posterior. Galvanism was given practically as in Case I. The patient attended the clinic faithfully twice each week, although the treatment gave her but little if any relief for one month. Then the electrode was passed with difficulty into the cavity of the uterus. This could only be accomplished by placing the patient in the left lateral position, by exposing the cervix by means of a Sims' speculum, and straightening the uterus by traction on the cervix with a tenaculum. The canal was found to be very tortuous and six and one-half inches in depth. After this the resistance to the electrical current became much diminished, her hemorrhages abated, and her general condition rapidly improved. The strength of the current varied from thirty to seventy milliampères.

May 19th—that is, forty-five days after the treatment was commenced, and fifteen days after the electrode was passed into the cavity of the uterus—the tumor is reduced about one-sixth in size and the patient is much improved.

June 9th. Patient is quite active and is now doing much of her own housework, while formerly she could attend to none of these household duties.

June 19th. Tumor is now about three-fourths its original size. Patient menstruates regularly, but not excessively and without suffering much pain. Her strength is practically restored and she now suffers but little from pelvic pain.

IN MEMORIAM.

CHARLES THEODORE PARKES, M.D.¹

Born August 19th, 1842; Died March 28th, 1891.

THE appalling mortality in Chicago in the winter of 1890-91 appeared to reach its climax in the demise of the subject

¹ Read before the Gynecological Society of Chicago, May 22d, 1891.

of this memorial. A terror of death had seized upon the masses; we saw its relentless strides in our midst, trampling to earth nearly one thousand hapless victims each week. A subdued, awed mental condition existed in our city whose equal had not existed since the memorable autumn of 1866. Each morning the death columns of the daily press were scanned with an ill-concealed anxiety. In the death of several members of the medical profession, of advanced years, we all admitted the appropriate tribute to the natural failure of the powers of life; but in the untimely departure of our esteemed Fellow the profoundest impression prevailed, which was eagerly voiced by his friends, and by strangers who had even never seen him.

Dr. Parkes was born of English parents in Troy, N. Y., in 1842. After living there a few years he resided in Pennsylvania for a brief time, when he removed to the West with his parents. His early education was derived from the public schools of the day. Early in the Civil War he enlisted as a private in the Western army, and became a lieutenant before the declaration of peace. Upon leaving the army he began the study of medicine in Chicago, and was graduated from the Rush Medical College in February, 1868. Immediately upon receiving his degree in medicine he was appointed Demonstrator and subsequently Professor of Anatomy in that institution, and held the position for a period of twenty consecutive years.

In these years he taught this subject with an enthusiasm and devotion unsurpassed in this or any other country. Thousands of physicians attest by their sound practice of surgery the thoroughness of the teaching and discipline, in their early student days, of this great master.

During that time he was an attending surgeon of St. Joseph's Hospital for about sixteen years. He was also an attending surgeon of the Presbyterian Hospital from its opening. Upon the demise of Prof. Moses Gunn, in 1887, he was appointed the Professor of the Principles and Practice of Surgery and Clinical Surgery in Rush Medical College, and held that position till his death. He conducted surgical clinics each week throughout the year, which for variety and extent were pronounced, by physicians competent to judge of such

matters, without a parallel in the annals of medical college teaching.

Everything, from surgical advice to the gravest capital surgical operations, was presented in his clinics. The marvellous revelations of the possibilities of modern antisepsis conspired to bring success to such work before audiences. He was the pioneer of laparatomists before large classes of medical students. His memorable report of thirty abdominal sections in the amphitheatre of Rush Medical College will be recalled by the Fellows of this Society. It was no uncommon thing for him to open a clinic with a laparotomy and subsequently perform four to eight minor operations, besides disposing of as many more dispensary patients in one afternoon. I once saw him perform a laparotomy, a thigh amputation, and a knee resection, with four minor operations, in one clinic. There seemed to be no limit to his capacity for work at such times. His giant proportions, his commanding presence, his rapid, masterful work, his wonderful mental acumen, made him a veritable son of Anak among teachers of surgery.

During the summer and fall of 1883 he began a series of experiments in intestinal surgery which revolutionized existing ideas in that branch of surgical achievements. Up to that time surgery treated gunshot wounds of the abdomen expectantly. His extended experience in laparatomies led him to inquire, "Why cannot surgery at once and fully avail to place such injuries in the category of the operative art?" His first publication of experiments on dogs was based on work performed on thirty-nine animals. The dog, anesthetized first, was shot through the abdomen; a laparotomy followed; the perforations of the intestines were found and closed under thorough antisepsis. The number of recoveries in his animals astounded the medical profession, and led them to further experimentation in all parts of the world. He made his first report on his new work at the meeting of the American Medical Association in Washington in 1884. He exhibited there specimens of intestines in successful cases, preserved from dogs slain after their recovery. He took with him to that meeting a small living dog, from which he removed five feet of intestine that had been perforated by bul-

let holes so numerous that resection was necessary. His later and more complete reports of this work have been translated and published in the medical literature of all countries of the globe. His name as a pioneer in the surgical treatment of wounds of the intestines will be handed down through all future time. He laid the foundation for the rational treatment of penetrating gunshot wounds of the abdomen.

Truthfully might he have exclaimed in the words of the Roman, "*Monumentum æris ædificavi.*" It can be claimed without refutation that his experimental and clinical contributions in this department of surgery constitute the monument of indestructible bronze which all nations will concede to his name. It was his great lifework.

His knowledge of human anatomy was thorough and exhaustive. During the first twenty years of his professional life, without interruption, he taught this department of the curriculum. He was a most accomplished dissector. His quick appreciation and enjoyment of the anomalies of human anatomy indicated his profound intimacy with the normal construction of our bodies. In the early years of his teaching his mind was continually occupied with the details of practical anatomy. He once made the remark to me, when preparing in an emergency a dissection of the cervical triangles with astonishing rapidity for class demonstration, "Isn't the infatuation of this kind of work prodigious? I believe that I could construct a human being with a scalpel." His work begat in him a concentration and directness of thought and terseness of speech which were shown to their most conspicuous advantage in professional consultations with other physicians. He rarely, on such occasions, delineated his observations, laid down postulates, reasoning therefrom and drawing conclusions. His habit was to say, "Doctor, you have a case of thus-and-so here, and I recommend this course of treatment," stating his recommendations.

Whenever he was baffled in making a diagnosis—a comparatively rare occurrence—he had the courage to acknowledge he did not know what the case was. His mind at such times was always on the alert, incisive, aggressive. The smallest circumstance often served to give him the key to the situation. I recall his investigation in a consultation in a case

of alleged obscure spinal disease in a man who had suffered much at the hands of many doctors and had been helpless in bed for many weeks, in which he was at sea. He was about to close his examination fruitlessly when he saw a young child of the patient displaying characteristic notched teeth. He at once cleared the room of members of the family, and drew from the patient reluctantly an almost forgotten specific history antedating his acquaintance with his wife many years. Appropriate treatment resulted in a brilliant recovery of the patient.

As in the study of anatomy one must fix the landmarks, so he had always in his mind the salient objective symptoms of all diseases. He seemed to possess a perennial freshness of such knowledge. His enormous experience had familiarized him with nearly every variety of human symptomatology. His perceptive faculty was most acutely cultivated, so that when he investigated new cases he was oftentimes in possession of his diagnosis long before associated physicians had fairly begun investigating. He seemed to possess that rare power, so seldom seen in members of the profession, of making what one might denominate an intuitive diagnosis.

His relations to the members of the medical profession were always of the most exalted standard. His observance of the rulings of our code of ethics was the strictest. In professional consultations, the attending physician was always sure that his position was strengthened by the wise counsel accorded and by the punctilious observance of the strictest caution against derogatory observations and questionings. He was abhorrent of the slightest unfairness between physicians. Many a young physician has cause to remember his kindly yet positive remonstrances against questionable professional conduct. His contempt for a certain class of attorneys who always seem to be possessed of an insane desire to encourage malpractice suits was measureless. Times almost without number he had occasion to strangle suits of this character in their incipency by a positive expression of opinion in private.

I recall an instance of an attorney calling on him in his office with a young man who had sustained a Colles' fracture in which better treatment would seem to have produced a

much better result than was attained, and asking his opinion of the treatment. A vigorous indorsement of the management of the case was expressed. The next day, in his anatomical lecture, which happened to be on the bones of the forearm, he saw that attorney occupying a seat in the upper row of the amphitheatre. Pretending not to see the unwelcome visitor, he dilated somewhat extensively on the difficulties attendant upon securing good results in Colles' fracture, and that lawyer had an opinion of malpractice-suit encouragers in the legal profession that he will never forget. Although he possessed no exalted opinion of homeopathic and eclectic physicians, I have known of repeated instances where he averted malpractice suits against them.

Prior to his last illness, for months, absorbed in writing a work on abdominal surgery, working oftentimes till 1 and 2 o'clock in the morning, he robbed himself of the rest necessary to the life of a busy man. His enormous experience in laparatomies was the groundwork of what would inevitably have been a most interesting and valuable book on this new branch of surgery.

He was stricken down in all of the physical power and glory of a grand physique, with but little more than half a lifetime accomplished. He was just upon the threshold of a well-earned, full professional harvest, where his eyes had been permitted to view the promise of a professional future of unexcelled usefulness and prosperity.

His grand work as a surgeon and teacher came to a sudden end just prior to the commencement exercises of the Rush Medical College, leaving the students and his colleagues of the faculty in profound grief over the sudden ending of a brilliant career.

JAMES H. ETHERIDGE, M.D.

The following preamble and resolutions were passed by the Gynecological Society of Chicago :

Whereas, It has pleased Almighty God, in His inscrutable wisdom, to remove from a career of exceptionable brilliancy our honored Fellow and late President, Dr. Charles T. Parkes; therefore be it

Resolved, That in the death of this notable man we, as a

Society, have sustained a great and an irreparable loss, of one whose untiring industry, matchless skill, great eloquence, broad learning, and wonderful genius commanded the admiration of all;

Resolved, That as a profession we mourn the loss of one of its brightest ornaments; a peerless surgeon with rare powers and qualities of mind; a brilliant operator, prompt in conception, fearless in execution; an associate zealous and honorable; a teacher learned and forcible; a friend genial and faithful;

Resolved, That we extend our deepest sympathy to his stricken family in this their great bereavement;

Resolved, That these resolutions be spread upon our records, published in our Transactions, and a copy thereof be transmitted to the family of the deceased.

(Signed), E. J. DOERING,
A. REEVES JACKSON,
JOHN BARTLETT.

TRANSACTIONS OF THE GYNECOLOGICAL SOCIETY OF CHICAGO.

Regular Meeting, May 22d, 1891.

The President, DR. W. W. JAGGARD, in the Chair.

DR. J. H. ETHERIDGE read a

MEMORIAL SKETCH OF DR. CHARLES THEODORE PARKES.¹

DR. CHRISTIAN FENGER read a paper on

OVARIOTOMY DURING PREGNANCY.²

DR. KARL SANDBERG.—I am very glad that Dr. Fenger has brought this subject up to-night, because it is one of great interest to us all, and one that has not been discussed as fully as I think it ought to be. Dr. Fenger has covered the ground so thoroughly that there is not much to do except to indorse all he has said. As soon as we agree, and I presume that

¹ See page 1122.

² See original article, page 1097.

we all do, that ovariectomy is indicated in general in cases of ovarian cyst, the next point is to decide whether pregnancy constitutes any bar against this operation. Statistics show that the mortality of ovariectomy complicated with pregnancy is so far from being larger than the general mortality of ovariectomy that it really seems to be lower. Spencer Wells in 1883 reported eleven cases of ovariectomy, with only one death. This would make less than ten per cent. At that time, I think, Spencer Wells' general mortality was about twenty-five per cent. Lawson Tait reported about the same time eleven cases, also with one death, which would give about ten per cent. This is higher than his general mortality, but he attributes this one death to the use of the clamp, which was also used in the case of Spencer Wells that died. Olshausen published last year a series of twenty-four cases of his own without a single death. Olshausen's mortality from ovariectomy in general is about ten per cent. Martin has some few cases without a death. All this goes to show that there is no greater danger in performing an ovariectomy during pregnancy than outside of it.

Furthermore, it is to be considered whether ovariectomy is possible in all cases where pregnancy is the complication. It has been laid down as a rule by Olshausen, and I think by Hegar and Kaltenbach, that small tumors impacted in the pelvis that do not seem to be movable contra-indicate ovariectomy. I am extremely glad that Dr. Fenger has reported a case to-night of exactly this kind, where ovariectomy was performed with success to mother and child; it shows that this difficulty is only imaginary, it is only lack of courage on the part of the operator. I believe that all these cases can be operated upon by laparotomy, and the tumor can be removed; and if we have any doubt about it we ought not to cause a premature birth or tap a doubtful cyst through the vagina, as long as we can make a small exploratory incision and ascertain just what the condition is. It appears from Dr. Fenger's report that even in those cases where the tumor is impacted in the pelvis under the pregnant uterus, the uterus can be lifted up and turned out, the tumor removed, the pedicle secured, and the operation finished in good shape. But even if the tumor could not be lifted out, I do not see any great obstacle to tying the pedicle at the bottom of the pelvis with a long-handled, blunt needle, tying and cutting as you go along.

An objection has been made to this operation because of the number of cases resulting in abortion afterwards. This seems to be a little different with different operators. Spencer Wells, in his first list, had one case where he did not expect pregnancy and tapped a pregnant uterus. He made a Cesarean section, removed all the contents, and sutured the

uterus. That cannot be counted in, but of his other ten cases three aborted. In one he secured the pedicle with a clamp, and the patient aborted about ten hours afterwards and died; he had another case that aborted six days, and one that aborted twenty-five days after the operation—that makes three out of ten. Lawson Tait reports eleven cases uniformly successful. Olshausen, on the other hand, seems to have had several abortions. In his first eight cases he reports two abortions. In his whole series of twenty-four he does not give the number, but says that some aborted right after the operation and some a few weeks or months after, and he ascribes it in all the cases to the operation. Hegar and Kaltenbach give the percentage as about forty, without giving the sources from which they draw this conclusion. I get the impression from this that the number of abortions resulting from this operation is, and will be, different with different operators. It was doubtless so that in Spencer Wells' case the use of the clamp caused immediate abortion, which we can understand on account of the traction on the pedicle. We will probably find in the future that some operators who have a large percentage of abortions in the performance of the operation adopt some procedure which is to blame for this. But even if we admit that there are a great number of abortions, the fact that in a great number of cases the operation can be performed without abortion occurring is sufficient to do away with this objection, because, in the first place, it has been proved by Olshausen that abortions do not increase the mortality, and, in the second place, if we do not do ovariectomy we will have to depend upon the production of premature labor as the principal means of getting over the obstacle.

In conclusion, I congratulate the Society upon the fact of this excellent paper being read here, and I most heartily indorse the views of Dr. Fenger.

DR. A. REEVES JACKSON.—My experience in the removal of ovarian cystic growths during coexistent pregnancy comprises two cases, which I will briefly relate. Some years ago a woman was placed under my care with enlargement of the abdomen of a doubtful character, and which was supposed by her physician to be due to hydramnios. She had been married twice. Her first marriage was childless, and after a widowhood of three years she married again. Menstruation had been regular up to six months prior to the time at which I saw her. Then it had suddenly ceased, and she supposed herself pregnant. Prior to the cessation of menstruation, however, a tumor had appeared in the left side of the lower abdomen, and had attained about the size of a cocoanut. After menstruation ceased there was very rapid distention of the abdomen, and, inasmuch as the tumor could not be clearly

distinguished, the enlargement was attributed to dropsy of the ovum. At the time of my examination the abdomen was enormously distended; the enlargement was symmetrical and seemed to occupy the entire abdominal cavity. The walls of the abdomen were thin, traversed by enlarged vessels, and the umbilicus was protruding.

From the history which was given of the rational and sympathetic symptoms of pregnancy which had occurred during the first three months, and the condition of the os uteri, which was easily within reach, I felt satisfied that the patient was pregnant and that she had also an ovarian cyst together with some free abdominal fluid. Her condition at that time was an extremely critical one and the symptoms urgent. I was, however, reluctant to interfere in a radical way so long as it seemed that she might go on to the full term of uterogestation. There were some unusually cogent reasons why she should bear a living child. But the symptoms in a few days became so much more alarming that I concluded to tap the cyst, which I did, removing by a small trocar some gallons of fluid having a soap-and-water appearance. She was relieved at once, and after the operation the uterus could be distinctly felt rising up to within an inch and a half of the umbilicus, and at the lower left side were distinguishable the basic portions of the tumor, consisting of numerous hard nodules, clearly corroborating the diagnosis of multilocular ovarian cyst. In the course of six weeks the abdomen filled again, with even greater rapidity than before, and she was so emaciated and suffered so greatly that I felt it to be unsafe to longer defer operation. Accordingly I removed the cyst. The patient got on well in every way, but five days afterward labor set in, and she was delivered of a child developed to about eight months, which survived. She recovered after a rather tedious convalescence and has subsequently borne two children. In this case the pregnancy was known to be present, but in the second case on which I operated the pregnancy was not known—not even suspected. In June, 1888, the wife of a clergyman, 30 years of age, was brought to this city from Lincoln, Neb., suffering from a rapidly growing cyst which had commenced in the right side. It was clearly defined, and gave the impression of being a tumor which might weigh four or five pounds. The patient suffered severely from pain, which had commenced about nine months before. I learned subsequently that she had ceased menstruating two months before I saw her. I had no hesitation in at once removing the tumor. At the time of the operation the uterus was found somewhat enlarged and presenting the appearance of pregnancy, and I expressed the belief that the pregnancy was two and a half months advanced. The

patient recovered, went home, and was safely delivered of a living child in the early part of the following December.

With regard to the propriety of removing an ovarian cyst during pregnancy, I hold that the decision should depend upon the circumstances of each case. It should not be done because pregnancy coexists; on the other hand, the operation should not be withheld because of accompanying pregnancy. Usually in a case in which interference becomes necessary, and a choice could be made, I should prefer to remove the cyst rather than to induce premature labor. I deem it the safer operation of the two. Nevertheless, when it may be safely done, I should defer ovariectomy until the fetus had attained viability. I cannot agree with the opinion expressed here that it is less dangerous to remove an ovarian cyst during pregnancy than under other circumstances. I believe, on the other hand, that any important abdominal operation is likely to induce premature labor or abortion, and hence, unless the symptoms were urgent, I should defer operation until some necessity arose. Some of the statistics which have been adduced here to-night are misleading, because they give the impression that ovariectomy is made safer by pregnancy. I cannot accept this. If a sufficient number of cases were known I feel confident that the results would not lead to this conclusion. In the case related by Dr. Fenger there could be no question about the propriety of removing the tumor. There was a cyst of dermoid character so situated as to be liable at any time to give rise to dangerous complications from the bursting of its walls. Such a result would be almost certain to occur during labor. But when the cyst is found occupying such a position as not to interfere with labor, it may be properly let alone until after parturition. I am very glad that this paper has been brought before us. The statistics gathered here are exceedingly valuable, and personally I thank Dr. Fenger for presenting the subject.

DR. A. H. FOSTER.—I would state that during the temporary absence of the attendant I was called to a case of labor, in an old patient of mine who had lived with one husband for several years without having become pregnant. By reason of some incompatibility of body or mind the parties separated, and she had married a second time, and this was the fruit of the union. I found that one of our Fellows had done ovariectomy upon her when she was some two months advanced, but I do not know the particulars of the case. Our lamented Dr. Parkes had treated her, knew about the case, and had followed it up. The labor, which was a forceps case, was very difficult. I have been called to the family only once since, and then in a great hurry this last winter, and found the child living and doing well.

DR. FRANKLIN H. MARTIN.—I simply wish to put a case on record. The first laparotomy I performed was in 1883. The patient, aged 30, presented the following symptoms: She had not menstruated for three months. During the time that menstruation should have occurred the pain was intense and she had epileptic fits. The patient was examined and a diagnosis of pregnancy made. About two and a half months afterwards a tumor was discovered to the right of the uterus, about the size of a cocoanut. The discovery of this tumor so changed the aspect of affairs in my mind that pregnancy, while previously admitted, was really lost sight of, and I decided to perform a laparotomy. I made my preparations as liberally as preparations were in the habit of being made in those days, including steaming and thorough renovation of the house in which the patient was to be operated upon. I was assisted in the operation by Drs. McArthur, Bishop, Doering, and others. The abdomen was opened, and a tumor about the size of a cocoanut to the right of the ovary discovered, together with a confirmation of the pregnancy. The tumor was removed, the abdomen closed in the ordinary way, and the patient put to bed. She did fairly well until the fourth day, when she aborted with a fetus of about four months. This was my first laparotomy. I started in with the idea of doing one hundred laparotomies without a death. At the end of the sixth day after this operation my mortality in abdominal surgery was one hundred per cent, the patient dying of acute sepsis.

DR. CHRISTIAN FENGER, in closing the discussion, said: I thank the Society very much for their kind reception of my paper. There are, of course, a number of questions pertaining to this matter which I have been unable, on account of lack of literature, to go thoroughly into. For instance, the question, Shall we make a distinction between tumors in the small pelvis and tumors in the abdomen; is there any choice of action when a tumor is located in the small pelvis; shall we wait and not do ovariectomy under certain circumstances? Tumors in the small pelvis I think indicate, as Schroeder says, immediate operation. These questions can only be solved by having observed a sufficient number of cases where both of these classes of tumors were left until the end of pregnancy, so as to see the real danger of each of them. I had hoped that the obstetricians, who have seen a large number of labors, might give us some of their experiences in this respect, and thus help to solve that part of the question.

Regular Meeting, June 19th, 1891.

The President, DR. W. W. JAGGARD, in the Chair.

EXHIBITION OF SPECIMENS: (A) FIBROIDS OF THE UTERUS.

DR. HENRY T. BYFORD.—I have here the remains of two small ovarian tumors. One was the size of an orange when removed, and the other the size of an egg. I brought them merely to bring again before the Society the method of operating—namely, through the vagina. There are only a few cases on record of operation through the vagina, I think, a large portion of them being by myself. These tumors were removed very easily, and the patient got along without trouble. I wish to refer to the greatest drawback there is to this way of operating. If you tie your ligatures right, you might say the patient must get along well, because if there is any suppuration or trouble it finds its way into the vagina through the stitches. Sepsis, when present, is nearly always confined to the pelvis, and so far I have not observed general peritonitis. There is, however, some danger of sepsis, because the ligatures come in contact with the vagina and are liable to become infected. I have had two or three cases in which there was an exudate formed by the stump, which, however, was promptly absorbed; and I have had two cases with suppuration in oöphorectomies for pyo-salpinx. No serious symptoms occurred in either case, although in one case both of the stump ligatures were expelled through the vaginal incision.

(B) A FIBRO-CYSTO-SARCOMA WEIGHING FORTY POUNDS.

This tumor was taken from Mrs. R., aged 49. Menstruated at 12; married thirty-one years; eight children. She first noticed the tumor six years ago. She had some menorrhagia until two years ago. The tumor evidently started as a fibroma, but degenerated into a fibro-cysto-sarcoma. It was extremely vascular and weighed forty pounds. The uterus was the size of a pineapple, and small tumors were developed down into the broad ligament. This immense mass grew from a large pedicle on the posterior uterine wall.

One interesting point is that the patient had menorrhagia until two years ago. Probably the menopause was trying to come on, but the growth was very rapid and the menopause was not helping her. The first difficulty I had was with the intestines, which were plastered all over it, with veins the size of a goose quill running on it, necessitating an immense amount of ligaturing. I suppose I left twenty or more liga-

tures in the abdominal cavity. Of course severe bleeding occurred. The pelvis filled twice with blood. There was a large band extending from the tumor to the posterior wall of the vagina, and another band extending down into the cul-de-sac—the remains of old adhesions. They were as thick and as broad as two fingers, and had very large blood vessels in them. I found it exceedingly difficult to get under the tumor, but I finally got the masses out of the broad ligaments and put round them the elastic ligature, leaving a cavity of raw tissue on either side. I had to be very careful in separating the bladder, whose walls were drawn up and merged with those of the tumor. A small rent occurred in it. I then found I had my ligature on the ureter, which was so intimately connected with the pedicle that I had to make a stump higher up. As the patient had lost a good deal of blood, I attached it to the abdominal walls above to save time. I put in two drainage tubes. The disintegrated tissues on the edge of the intestines made it necessary to put in a drainage that would extend into the lumbar region as well as into the cul-de-sac. Into each broad ligament I put a drainage of iodoform gauze. No urine has yet been passed, but the condition is otherwise as good as after an uncomplicated case. The history will be reported at the next meeting.

DR. A. REEVES JACKSON.—I desire to express my appreciation of the skill which has been shown in the removal of this formidable tumor. Twenty-five years ago it would have been almost impossible to accomplish such a brilliant result as is shown here. The essayist's own criticism upon his operation is perhaps a just one; nevertheless, under the circumstances in which he found himself placed, with his patient almost *in articulo mortis* from loss of blood, I do not well see how he could take any other course. To prevent a patient from dying on the operating table is always desirable. I feel personally obliged to the doctor for presenting us with such a beautiful specimen, and am pleased to know that so far he can report such a good result.

DR. WELLER VAN HOOK read a paper on

THE TREATMENT OF NON-MALIGNANT RECTAL STRICTURES.¹

DR. BAYARD HOLMES.—I cannot add very much to this interesting and exhaustive paper, which deals with a subject that comes to all of us occasionally, and one in which we have had no guide up to the present time. I believe the subject has never before been so exactly and positively treated as to be intelligible and of use in diagnosis and in treatment. The fact which has been brought before us so clearly, that these

¹ See original article, page 1062.

strictures are not as a rule due to syphilis, as has been generally supposed, is one which renders it probable that surgical treatment will be resorted to more frequently than it has been. The terrible effects of dilatation, the pain, and all the consequences which follow it, have for a long time been sufficient to deter us from using dilatation, except in the preparation of the patient for radical operation. The use of the buried suture, not perforating the mucous membrane of the intestines, not penetrating the skin, and yet holding the gut in perfect coaptation with the sphincter, will obviate the danger of having anything but immediate union. I believe the time has come when the temporary fastening through the skin or mucous membrane is as irrational as the temporary ligature with a long string which is afterwards pulled out. In these cases, with a permanent buried suture we may secure primary union, so that even the very highest strictures may be removed. No cases have been reported of strictures so high up as to come in connection with the peritoneum, and I doubt very much if any such strictures will be found.

DR. F. H. MARTIN.—I would like to add my humble thanks to the reader of this paper. Certainly he has made this field an entertaining one, appearing much more inviting than it has appeared in the past. In fact, the operation as described to-night ought to be done as easily and effectually, and with as little mechanical operative difficulty, as removal of the uterus by the vagina can be accomplished. And if operative methods are to be employed, it seems to me we have had a very pretty and ideal method laid down for our adoption.

Those of us who have made a systematic and conscientious study of electrolysis in its action of causing a disappearance of pathological deposits in the walls of tubular organs like the uterus, the vagina, the esophagus, and the urethra, are convinced of its power to perform a like result for the rectum.

It is no fiction that a metal bulbous electrode connected with the cathode of a galvanic battery will dissolve its way through a tight stricture in plain view of the operator. I demonstrate this to the students of my clinic every week that I teach. They make the effort to introduce the electrode, which has a pointed metal bulbous tip double the size of the canal, and without electricity they fail. With it, without great pressure, the electrode passes slowly but surely into the canal. With the process a bubbling of the liberated gas is plainly observed, and as it breaks through the secretion it produces a sound which is audible to a large class of students.

This electrolytic action, which can be readily demonstrated by the sense of feeling, seeing, and hearing, has also a clinical

significance for ordinary fibrous strictures of the rectum. Practically, many well-authenticated cases of cure of stricture of the rectum are on record.

Robert Newman, at the New York meeting of the American Medical Association in 1889, read a paper on this subject in which he reported all recorded cases up to that date, and in which he reported a number of complete cures among his own cases.

Liebig and Rohé, in their excellent work on electricity in medicine, say of this subject: "The procedure may be regarded as an established one in surgery."

My experience with this method of treatment is limited to two cases. Both are now under treatment, and, therefore, while of no conclusive value, they are suggestive. Both cases had been tortured with bougies, one for months, the other for years. Case I., aged 44, gave no history of specific trouble. Stricture had gradually been coming on for a number of years, obstruction becoming more and more marked, until she resorted, by the advice of her physician, to flexible bougies. By this means she existed for some time, when her physician referred her to me for a trial of electricity. I found a stricture, about three inches above the anus, which would with considerable pressure admit the end of the index finger, but which gradually narrowed above this point until a No. 14 English bougie would barely pass. The bowel was much thickened anteriorly and laterally, and the mass seemed at least three-quarters of an inch in the centre of the stricture. From the induration of the tissues I judged the stricture to occupy about two inches of the bowel. My first impression of this case was that carcinoma was the cause of this difficulty. Great pain was experienced when an attempt was made to pass a bougie.

I selected an insulated staff upon which could be secured metal tips from the size of a slate pencil to one the size of my index finger. Upon this I attached a tip which I estimated was about two sizes larger than the stricture. I inserted this staff with its metal bulb into the stricture until I met a decided obstruction. I then attached this electrode to the cathode of the galvanic battery, and completed my circuit with a large, indifferent abdominal electrode. A current of fifteen milliampères was then carefully turned on, and slight pressure was made on the staff of the electrode, when it gradually penetrated the stricture until it had passed it. The current was then turned off and the electrode carefully withdrawn. The only pain experienced was a sharp, burning sensation at the point of the electrode, which invariably passed off within a half-hour after the current was withdrawn, leaving a sensation of relief which compared very favorably with

the severe pain which had invariably followed dilating with bougies.

This patient got relief immediately from her obstruction. After two weeks' treatment, three applications a week with an electrode of constantly increasing size, I was able to pass easily a No. 36 bulb where a 20 was employed at first. The patient now, after three months, is practically well as far as any obstruction of the bowel is concerned, and I can easily pass an ordinary vaginal electrode through the stricture, which is two centimetres in diameter. The finger passes into the stricture easily now as far as can be reached, the exudate is materially lessened, and the malignant feeling has entirely disappeared.

This patient is abundantly satisfied with the results of the treatment, and considers herself about well.

Case II. cannot be properly considered a stricture. It is an obstruction on account of an external cicatrix following an abdominal incision for pelvic abscess. The bowel is constricted about six inches from the sphincter by an unyielding mass of exudate in the pelvis. I did not operate upon the patient. She was referred to me, some time after the operation, for electricity, with the idea of accomplishing with that agent what the knife had failed to accomplish. About a No. 24 bougie could be made to traverse the constricted bowel. A metal electrode with an insulated staff was constructed, the active or distal end of which was about No. 24, two inches in length, with a rounded and pointed tip. This instrument was carefully inserted into the obstructed portion of the bowel, and with the indifferent electrode placed in the portion which would necessitate the current traversing the mass of exudate. A current of thirty milliamperes was passed for five minutes, the cathode being internal. This patient is invariably relieved of pain by this treatment, and after five applications I find the bowels much less obstructed, so that a No. 30 sound can easily be passed. I am positive, from my experience with pelvic exudates, that a cure can be accomplished in this case.

DR. A. REEVES JACKSON.—I have listened with a good deal of interest to this very excellent paper. I coincide with the expressed opinion of the writer that a lapse of two years is necessary before we can affirm the permanent efficacy of any method of treatment for so intractable a condition as rectal stricture, and therefore I regard the cases related by Dr. Martin as wholly incomplete. We cannot have a mature result at the end of three months, surely; and while we may have confidence in the continuance of the success which he has reported, it cannot be accepted as a criterion of the lasting usefulness of the treatment adopted.

Again, the cases reported by the essayist are too few in number to be of much value. "A single swallow does not make a summer," nor is a single case sufficient to establish any operative mode of procedure.

DR. WELLER VAN HOOK, in closing the discussion, said: I have little to say in conclusion except as regards the remarks of Dr. Martin. I thank him for the complimentary part of his remarks very heartily, as I do the other gentlemen who have spoken so kindly of the paper. I would say that, so far as regards the subject of electrolysis in the treatment of strictures, my experience so far has been confined to the treatment of cicatricial contractions in the male urethra; and, as I had seen no more benefit from the application of electrolysis than I believed would be obtained by gradual dilatation, I was discouraged from using it in the rectum. I am aware of the paper to which Dr. Martin has referred, by Newman, of New York. I read it, but it made little impression on me, as it seemed to me his cases were not studied with a great deal of accuracy or reported with much scientific acumen.

As regards Dr. Martin's cases, I would say that the results are interesting, but the study of the literature of the subject will reveal a great many cases treated with equal success by simple dilatation. I would say also that I believe the stretching of the cicatrix of the rectum to a calibre of two centimetres is not sufficient to be reckoned as a cure. As I think, first, that the calibre reached by Dr. Martin is insufficient, and, second, that the report of his cases is premature as regards the question of permanency of result, I must regard his cases as irrelevant.

DR. J. A. LYONS read a paper on

TWO CASES OF FIBROID TUMOR OF THE UTERUS SUCCESSFULLY
TREATED BY WEAK CURRENTS OF GALVANISM.¹

DR. F. H. MARTIN.—These cases seem to have been well managed. The essayist made the point that in the first case electricity was not used in the uterine canal to any extent, but at the same time menorrhagia was checked. In the treatment of fibroid tumors with menorrhagia, there are two ways of curing the menorrhagia: one is to cauterize the mucous membrane of the uterus, the other is to cure the disease. In this case the tumor disappeared, and there was no cause for cauterization of the canal. There is still a scepticism in the minds of many physicians in regard to the benefits to be derived from the treatment of fibroid tumors by electricity. I have had an experience of six years with this agent, and my experience goes to show that seventy-five per cent of all cases of fibroids as they come to me can be cured—I mean either absolutely

¹ See original article, page 1120.

or symptomatically—by electrolysis. Twenty-five per cent come under the head of those tumors that one could not rationally expect to benefit by electricity. So I believe that electricity has come to stay.

DR. A. REEVES JACKSON.—I think it would not be conclusive if the case were presented only after the alleged cure. We should have an opportunity to investigate it also *before* it comes under treatment. I say this because of the many mistakes made in diagnosis. Patients have frequently been sent to me with a diagnosis of fibroid tumor, when my own measurements and examination did not at all coincide with the accompanying statements, and sometimes they were not cases of fibroid tumor at all. When measurements may differ so greatly, I should not like to trust unreservedly to another's opinions as to reduction or increase in the size of a growth. Hence the mere presentation of a patient after treatment would not be sufficient.

DR. F. H. MARTIN.—It seems to me that it has been implied that the advocates of electricity are liable to be carried away by an enthusiasm which no other system of treatment or therapeutics might engender. It does seem to me there is no more reason why patients should be presented who have been reported cured of fibroid tumors by electricity than those who have been treated or cured by any other method. To have a statement of that kind go out from our President would seem to reflect at least upon the members of this Society who have been in the habit of advocating electricity. I believe that I have been honest in my statements in regard to the treatment of my cases. I believe that I have cured a great many cases of fibroid tumor symptomatically. When I state that a certain case of fibroid tumor is cured symptomatically, I mean that, so far as the symptoms are concerned, in every respect the patient is well. That is, if you should consult her she would tell you that she felt well in every respect as regards pressure, deformity, and hemorrhage.

DR. A. H. FOSTER.—I would like, as a matter of information, to inquire of the President what his credence is in the report of the two Keiths on their hundred or more cases in which this treatment has been employed during the last three years.

DR. W. E. CLARKE.—I think I can corroborate the statement that the enthusiasm of those who believe so ardently in electricity will sometimes carry them too far away. I am thinking now of a case of engorgement of the womb in a patient who lived in the East. She had some friends who were very enthusiastic in favor of electricity, and they urged her to employ a man who was skilled in that mode of treatment. She returned to this city and consulted some physi-

cians, and I gathered from her that fibroid of the uterus was diagnosed. As I had been the family physician for a good many years, it was the strong desire of her husband that I should undertake the case. One day she showed me a letter from one of the gentlemen she had consulted, saying that if he could have an interview with her he could convince her that he could effect a cure by electricity. There was no electricity tried in her case, and she has recovered, I think fully. I think the only difficulty now will probably come to a climax in the course of six or seven months, and it will not require electricity to remove that tumor, I am sure. In another case where electricity was tried for a fibroid tumor my diagnosis was different. I did not think it was a fibroid, but the case passed out of my hands, electricity was tried, and that case is reported in the journals as having been cured by electricity. But in that case I assisted in removing cystic tumors of both ovaries. I have known so many cases where a positive diagnosis had been made of fibroid tumors, and the patients recovered without any treatment or it was ascertained that no fibroids existed, that I am very chary about accepting as correct a diagnosis of fibroid tumors in a great many cases. The gentleman reports seventy-five per cent of the cases cured by electricity, cases that it is supposed could not be remedied by anything else, but before crediting that statement I should like to have seen the cases when the diagnosis was made.

DR. BAYARD HOLMES.—I wish to say a few words as to the point raised by Dr. Jackson in regard to the length of the papers presented here. It is a remarkable circumstance that a well-digested, well-written paper on any subject, no matter if it is long, elicits very little comment, while a very short and incomplete paper on a subject of interest frequently gives rise to interminable discussion. I am in favor of papers that will exclude discussion, because they bring in all the facts in relation to the subject, because they present them in a consecutive and rational order, and because they lead to rational conclusions which meet the approval of every one. I am opposed to throwing an unstudied case or proposition before this Society, or, at least, allowing an unlimited and unprofitable discussion.

REVIEWS.

INTRODUCTION À L'ÉTUDE CLINIQUE ET À LA PRATIQUE DES ACCOUCHEMENTS.—INTRODUCTION TO THE CLINICAL STUDY AND PRACTICE OF MIDWIFERY. By PROF. L. H. FARABEUF and DR. HENRY VARNIER. Preface by PROF. A. PINARD. 475 pages; 362 figures. Paris, 1891.

This book, as stated by Prof. Pinard in his preface, is not a system of midwifery, nor a text book on the subject in the ordinary sense. It is rather a manual for the guidance of the student in practice upon the manikin, and may therefore be used as a supplement to any text book or course of lectures on midwifery. It is designed to replace illustration by the phantom where that is absent, or to take the place of an instructor to the student working by himself with the manikin. It would be equally valuable to an inexperienced instructor as a model of such clinical teaching.

The subjects treated of are: The Obstetric Anatomy of the Pelvis; Presentations and Positions; Mechanism of Labor in each of these; Delivery in Breech Presentations; Version, and Forceps.

Under each head we find a series of large, clear, simple woodcuts, illustrative of the practical points of the subject from beginning to end. Thus in Obstetric Anatomy there is no description of the pelvis and pelvic organs such as a lecturer would give. We find seventeen plates of the dry pelvis and the pelvis clothed with its soft parts; and the text is just the description an instructor would give who was demonstrating the pelvic canal to a student preparatory to the study of the mechanism of labor, or drilling him in its details as a supplement to his lectures. In the Mechanism of Labor the plates show step by step the fetus and pelvis as they would be used by an instructor to demonstrate each successive stage; and the text is the clear and concise reproduction of the description and explanation of the process which he would give as he exhibited each new arrangement.

Under the head of Delivery of the Breech, each step, every manœuvre, necessitated by all possible complications, are described and illustrated, and the disadvantages of an improper performance are shown as they would be on the phantom.

In the same methodical way, Pelvic Version, and the application of the Forceps in every possible position, are demonstrated in minute detail, with full illustration of the advantage or disadvantage of each manœuvre.

The work possesses the advantages peculiar to French teaching. This takes for granted that the student knows nothing, and proceeds to lay before him the whole subject step by step, omitting nothing, leaving nothing to be inferred or worked out without supervision, so as to make sure that he learns everything minutely, accurately, and exhaustively. It also takes for granted that there is but one right way of doing everything, and considers it imperative to teach the student this right way under every possible combination of circumstances.

With these advantages the book has also some defects. Thus, in the article on Obstetric Examinations, examination by vaginal touch is alone treated of. There is hardly an allusion to external palpation as a means of diagnosis of the presentation, and no directions for its performance.

The article on Version is headed "Pelvic Version by Internal Manipulation." The writer begins by stating that "this operation is confined, in France, to shoulder presentations; for wherever the head, flexed or unflexed, presents at the superior strait, the Paris school prefers the use of forceps, and the more emphatically should there exist pelvic contraction." Also that "at the present time, so long as the bag of waters is intact, the true course is considered to be to transform the shoulder into the vertex presentation; therefore pelvic version is never performed except in cases where the membranes are ruptured, the shoulder engaged, and the arm prolapsed." There is, of course, no reference to external version or bimanual version, since all cases suitable for these manœuvres are ruled out and transferred to cephalic version. Yet the subject of cephalic version, of any change of position of the fetus before rupture of the membranes, which includes so large a number of cases, is omitted. No reference is made to their management nor to the mode of performance of such manœuvres.

With all its peculiarities and omissions, the book is valuable, because, as its authors claim, it fills a gap, there being no other which covers just this ground of serving as demonstrator in practical midwifery.

The illustrations are all original, and both they and the text are admirably clear and accurate. We can well understand the statement that the book occupied five years in preparation. As a manual it would be still more valuable for American students were its omissions filled, and its teachings, in some respects, adapted to their use by an experienced instructor. Independently of the value of its teaching, a good translation would be useful to American students as an illustration of what is meant by the complete understanding of a practical

subject, as contrasted with the vague half-knowledge which is so common a vice in students taught by lectures only.

EMILY BLACKWELL.

GYMNASTIQUE GYNÉCOLOGIQUE ET TRAITEMENT MANUEL DES MALADIES DE L'UTÉRUS ET DE SES ANNEXES.—GYNECOLOGICAL GYMNASTICS AND MANUAL TREATMENT OF DISEASES OF THE UTERUS AND ITS APPENDAGES (THURE BRANDT'S METHOD). By DR. A. JENTZER, ex-Professor of Operative Gynecology at the Faculté de Médecine, Geneva, etc., and M. BOURCART, ex-Assistant at the Private Clinic of Profs. Jentzer and Vulliet. Pp. 160; 90 illustrations. Geneva, H. Georg; Paris, Georges Carré, 1891.

The authors of this interesting work begin with a review of all the articles hitherto published upon the subject in France, following it by a history of gynecological gymnastics in general and of Brandt's treatment in particular. They devote a short chapter to a consideration of the physiology of gymnastics, showing the action upon the circulation of the blood and lymph and upon the nervous system. A complete description is given of general exercises designed to remedy defective circulation, amenorrhea, constipation, and migraine, and to reduce vaginal displacements and strengthen relaxed abdominal walls.

Brandt's methods of diagnosis of pelvic disease are described, and a detailed account given of his massage treatment in the case of pelvic exudations, some chronic affections of the tubes and ovaries, adhesions and cicatricial retractions of tissue, the various uterine displacements, rectocele, cystocele, prolapse of the rectum, endometritis, incontinence of urine, uterine fibroids, constipation in adults and infants, diarrhea, floating kidney, and, finally, some of the disorders of pregnancy, as fatigue, pain, and vomiting.

The authors contradict the widespread idea that Brandt uses massage alone in the treatment of uterine affections, and state that he attaches the utmost importance to certain gymnastic exercises borrowed and modified from the Swedish movements.

The work is simple and concise in its style and marked by clearness in all the descriptions of the exercises. It would seem that there should be little difficulty in applying the treatment if the directions given were carefully followed, but the authors consider it most important that all who desire to practise this treatment should first have the benefit of practical instruction by Brandt himself or some physician who has studied with him.

The illustrations, while weird enough to remind one for-

cibly of ancient paintings of the "Danses Maccabres," admirably fulfil their purpose of furnishing a clear idea of the details of the various movements.

A second volume, containing clinical observations of the treatment and its results, is promised within a few months.

AIMÉE RAYMOND.

ABSTRACTS.

1. ENGSTRÖM, OTTO: OVIOTOMY DURING PREGNANCY (*Annales des Gynéc.*, October and November, 1890).—Of eighty-two cases of ovariectomy during pregnancy recorded by Olshausen, seventy-four were successful. The author records seven successful cases, and gives the following table:

Schröder.....	12	ovariotomies with 0 deaths.
Lawson Tait.....	11	" " 1 "
Spencer Wells....	10	" " 1 "
Olshausen.....	8	" " 0 "
Engström.....	7	" " 0 "
	48	2

From these cases he concludes that the operation upon a pregnant woman is attended with no more dangers than in an ordinary case, and there appears to be no more difference in regard to health. He recommends making the incision as near the site of the tumor as possible, so as not to disturb the uterus, and to avoid making traction upon the pedicle, which might lead to uterine contractions. The abdominal wound should be closed with great care, the gravid uterus should be left uncovered as little as possible; he carefully protects it with a warm sponge. A bandage should be worn for several months to protect the abdominal walls.

To avoid miscarriages he administers opium by the rectum. That these are as frequent as Jetter says, he denies. Jetter places them as high as forty-eight per cent, and Olshausen at twenty per cent.

GRACE PECKHAM.

2. VELIS (Budapest): TREATMENT OF POST-PARTUM HEMORRHAGE (*Orvosi Hetilap*, No. 10-12, 1890).—V. reports thirteen cases, which he treated by means of iodoform-gauze tampons, during labor (twice in the puerperium), to control hemorrhage, and draws the following conclusions:

1. Iodoform gauze may be considered as thoroughly aseptic in employing it for obstetrical work.

2. In atonic hemorrhages the iodoform-gauze tampons act as irritants and produce permanent contraction of the uterus. To obtain this result, only a small quantity should be introduced into the uterus, so as not to interfere with retraction.

In hemorrhages due to the state of the blood itself the iodo-

form gauze is worthless, in fact is injurious, for it tends to keep up the hemorrhage. In these cases we can obtain excellent results by employing weak solutions of chloride of iron.

4. When the hemorrhage is due to a high cervical tear, the only safe method of treatment is the suture.

5. Hemorrhages which occur in the latter part of the puerperium or directly after labor, and are associated with myomata, can only be controlled by packing the uterine cavity firmly and completely with iodoform-gauze tampons.

L. S. R.

3. SWIECICKI, H. (Posen): THERAPY OF PUERPERAL INFECTIOUS DISEASES (*Der Frauenarzt*, 1891, Heft 5).—The method, which was first proposed by Runge, of treating the patients with alcohol and warm baths, was condemned by Olshausen. S. is not inclined to be quite as sceptical as Olshausen, for he has observed many cases that were benefited by the use of alcohol. There are three ways in which the infection may be eliminated, omitting the intestinal canal; they are *the kidneys, the skin, and the salivary glands*. Keeping this theory in mind, S. treated a case of puerperal fever, which came under his charge five days after delivery, as follows; Every hour she received one litre of warm physiological salt solution. This fluid the patient retained. After each drink there was a profuse diuresis. Furthermore, S. injected hypodermically, during three successive days, pilocarpin gm. 0.01 twice a day. This was followed by profuse perspiration and salivation. In order to keep up the patient's strength, small doses of alcohol were given. The patient received in toto 17 litres of salt solution and six injections of pilocarpin of gm. 0.01. The result of this treatment was most satisfactory. Although it is scarcely proper to commend a plan of treatment after having tried it only upon one patient, still, from a theoretical standpoint, S. has every reason to believe that, by eliminating the infectious germs through the kidneys, skin, and salivary glands, a cure may be looked for.

L. S. R.

4. GOTTSCHALK, SIGMUND (Berlin): THIOL IN FEMALE DISEASES (*Centralblatt für Gynäkologie*).—G. has employed thiol in inflammatory female affections for the past nine months, and his results have been such as to encourage him to publish them. Thiol acts similarly to ichthyol, but it has the advantage of being absolutely inodorous. G. treated cases of para- and perimetritic exudations with thiol. He employed tampons soaked in a ten to twenty-per-cent solution of thiol-glycerin; these were placed against the affected parts and were changed daily or every second day. Besides this, the abdomen was rubbed with a thiol salve of the same

strength. After the tampons were introduced the patients experienced a "drawing together" in the abdomen, and there was frequently a profuse discharge. After the removal of the tampons the secretion ceased. When the thiol is applied to the skin it acts like tincture of iodine. After it has been rubbed in for six or eight days it produces a burning of the skin, and the skin peels off. After omitting it for a few days we are enabled to apply it again without causing the patient any annoyance. By this means, and by giving the thiol internally, G. observed that large exudations disappeared in the course of a few weeks. The rapidity of the cure was facilitated by the use of warm sitz baths and massage. G. then treated inflammatory erosions of the portio vaginalis with thiol siccum. He dusted the eroded surface with thiol powder and then introduced a cotton tampon. In these cases he observed very rapid cures. He then began to treat cases of endometritis, both acute and chronic, with thiol. Cotton soaked in pure thiol liquid was wrapped around a sound and introduced into the uterus. The application is harmless and not painful. G. has never observed a case of uterine colic resulting from it, nor has it ever caused any irritation, although he used it every second or third day. Sometimes a slight hemorrhage followed the immediate application of the drug, but this would quickly cease. The uterine mucosa would be discharged without pain after the use of the thiol. The writer's only objection to the use of the drug is that it is quite expensive.

L. S. R.

5. FALK, E. (Berlin): INTRA-UTERINE MEDICATION (*Berliner klin. Wochenschrift*, 1890, No. 45).—After discussing the various methods of employing intra-uterine therapeutics, the author recommends the antrophore, and by means of it to employ the desired drug, covered with a soluble preparation of gelatin, just as in cases of gonorrhea in the male. The antrophore can readily be introduced through a Bandl speculum, without previous dilatation of the cervix, and the medicament is dissolved in a few minutes and comes in direct contact with the mucous membrane. The patient is kept in the recumbent position for ten minutes, and at the end of this time the antrophore is removed. The woman can then go about as usual. This treatment is repeated every two or three days. This method has, beyond the other advantages over injections, that of the ability to employ an exact dose, and also the fact that the substance cannot pass into the abdominal cavity.

F. has employed the most varied drugs in this way. He has found no drug to act as a specific in endometritis. He obtained most excellent results with chloride of zinc 1 per cent, sulphate of copper 0.3–1.0 per cent, resorcin 10 per

cent, tannin 5 to 10 per cent. Ichthyol he found unsatisfactory. He treated cases of gonorrheal endometritis with creosote 2 per cent and sublimate 0.1 per cent, and latterly with chloride of zinc 1 per cent and sublimate 0.1 per cent. The chloride of zinc acts as a caustic and permeates the mucous membrane, thus allowing the sublimate to act upon the deep portions of the mucous membrane and to destroy the deeply seated gonococci.

F. observed that as a result of the use of the antrophore, especially when using chloride of zinc, sulphate of copper, and resorcin, in some cases atypical hemorrhages occurred, in other cases menorrhagia. In some cases there was severe uterine colic in the beginning. These conditions were overcome by employing the proper doses and by covering the antrophore with a layer of cocaine.

L. S. R.

6. MASSIN, W. M. (St. Petersburg): ENDOMETRITIS IN ACUTE INFECTIOUS DISEASES (*Archiv für Gynäkologie*, Band xl., Hft. 1, 1891).—Owing to the diversity of opinion expressed by different authors as to the effect of acute infectious diseases upon the uterine mucosa, the author made a series of experiments upon eighteen cases. Of these twelve were cases of relapsing fever, two pneumonia, two enteric fever, one dysentery. One case of acute general peritonitis (unknown etiology) was also examined. The uterus, with the adnexa, was removed at the autopsy and placed in Müller's fluid, and allowed to remain in the fluid from a month to a month and a half. Sections were made from different portions of the uterine walls, including the os internum and cervix. They were first kept in alcohol (seventy per cent), then were placed in absolute alcohol for one week, and then in photoxylin solution. The sections were stained with borocarmine, picrocarmine, eosin, and methylin blue. From an examination of these specimens the following conclusions were arrived at: The mucosa is affected in all of these acute infectious diseases, as are the glands, the vessels, and the uterine muscular fibres. Firstly, they are all markedly injected. The injection may be marked in one portion of the mucous membrane, or, as was usually the case, may affect the entire mucous membrane. The increased size of the vessels was especially noted in the small veins and capillaries. The arteries were empty, and in only a few cases did they contain formed blood elements. In many cases the dilatation was so great as to cause a rupture of the vessels, and consequently hemorrhages into the mucous membrane and between the muscular layers. These ecchymoses occurred in cases irrespective of the age of the patients. The most marked cases of dilatation and rupture were those in which the disease

had been continuous, as in the cases of pneumonia and enteric fever, whereas in the cases of relapsing fever hemorrhages were only found in half of the cases. Next, in reference to the glands. The epithelium lining these was always swollen and cloudy, having rounded edges; the cells were colored with difficulty. The epithelial cells secreted more mucus than normally. In some cases the glands were markedly enlarged. In many cases the epithelium was detached from the glandular tissue and lay in irregular masses in the glandular cavities. The membrana propria of the glands and the surrounding layer of spindle-shaped cells were well marked in nearly all of the cases. We frequently observed new-formed granular elements, which were arranged around the glands in the form of a belt. The muscular layer of the uterus did not seem to be much affected by the disease. As stated above, the vessels in the muscular layer were injected.

The changes which we observed represent a parenchymatous and interstitial inflammation of the mucous membrane and an interstitial inflammation of the muscular layer. Furthermore, in all of the cases a condition was observed which can be termed a hemorrhagic endometritis. We naturally conclude, after having made these experiments, that the endometritis undergoes three processes: 1. Increased amount of blood to the uterus, venous stasis, and inflammation of the vessels; 2. Granular inflammation; 3. Diffuse spreading of this inflammation. In our experiments we were unable to ascertain whether micro-organisms were present or not. We must, therefore, consider acute infectious diseases as important factors in the causation of uterine diseases, so that when we consider the etiology of acute and chronic endometritis we must always think of the possibility of the affection being the result of an acute infectious disease.

L. S. R.

7. ORTHMANN, G.: TUBAL PREGNANCIES IN THE FIRST MONTHS, WITH SPECIAL REFERENCE TO THE PATHOLOGICO-ANATOMICAL EXAMINATIONS (*Zeitschr. f. Geburtsh.*, Band xx., Heft 1).—Orthmann examined ten cases of tubal pregnancy. In none of the cases had the pregnancy lasted over two months. Two of the women died after operation. It is very difficult to distinguish between an old tubal pregnancy which, as a result of death of the ovum, has undergone many changes, and a hemato-salpinx. This can only be positively decided by using the microscope. As a rule, there is no trace of the fetus to be found, so that the only distinctive features are the evidence of the presence of the membranes, chorionic villi, and decidua. In all of the cases O. was able to find chorionic villi. He summarizes the results of his observations as follows:

1. If we find an organized blood clot in the interior of the tube, we can almost positively diagnosticate tubal pregnancy,

2. An intraperitoneal hematocele complicating a tubal pregnancy is either due to a rupture of the sac or to an abortion in which the ovum has ruptured at the ostium abdominale tubæ.

3. It is not absolutely necessary to find decidual cells in order to diagnose tubal pregnancy.

4. Chorionic villi are always found in the early months of tubal pregnancy.

LEONARD S. RAU.

ITEMS.

AN obstetrical polyclinic, under the supervision of Professor Leopold, has been opened at the Dresden Royal Hospital for Women, to which physicians attending the courses of instruction at the above institution have access, thus being supplied with abundant obstetrical material.

PHYSICIANS are cordially invited to be present at the sixteenth annual meeting of the American Gynecological Society, to be held in the lecture room of the Columbian University, corner 15th and H streets, Washington, D. C., on September 22d, 23d, and 24th, 1891.

The following is the programme :

First Day, Tuesday, September 22d.—Morning Session : Address of Welcome, by Dr. Joseph Taber Johnson, of Washington. Papers: 1. The Advantages of Mixed Anesthesia in Gynecological Surgery, by Dr. John R. Reeve, of Dayton, Ohio. 2. Concealed Accidental Hemorrhage during Labor, by Dr. Henry C. Coe, of New York. 3. Diffuse Adenoma of the Uterine Body, by Dr. James R. Chadwick, of Boston. 4. The Influence of Season on Recurrent Pelvic Inflammations, by Dr. Frank P. Foster, of New York. 5. The Therapeutic Aspect of some Ovarian Disorders, by Dr. Edward W. Jenks, of Detroit. *Afternoon Session :* 6. Insanity following Laparotomy, by Dr. J. M. Baldy, of Philadelphia. 7. Vaginal Hysterectomy by *Morcellement*: Technique and Indications for Operation, by Dr. Samuel Pozzi, of Paris, France. 8. A Clinical Study of Primary Carcinomatous and Sarcomatous Neoplasms between the Layers of the Broad Ligament, with Report of Cases, by Dr. Joseph E. Janvrin, of New York. 9. The Present and Improving Status of Cesarean Surgery, by Dr. Robert P. Harris, of Philadelphia. 10. Unique Case of Multiple Neuro-lipomata following Laparotomy, by Dr. H. Marion Sims, of New York.

Second Day, Wednesday, September 23d.—Morning Session: 11. President's Address. 12. The Treatment of Cancer of the Cervix Uteri by High Amputation: Second Series of Cases, with Additional Report on the First Series, by Dr. William H. Baker, of Boston. 13. The Advantages of Delivery in the Left Lateral Posture, by Dr. Henry J. Garrigues, of New York. 14. The Influence of Imperfect Development as a Cause of Uterine Disease, by Dr. W. Gill Wylie, of New York. 15. The Technique of Vaginal Fixation of the Stump in Abdominal Hysterectomy, by Dr. Henry T. Byford, of Chicago. 16. Can we Avoid Mural Abscesses and Ventral Herniæ after Laparotomy? by Dr. Horace T. Hanks, of New York. *Afternoon Session:* 17. Some Clinical Testimony as to the Ultimate Results of Removal of the Uterine Appendages, by Dr. Thaddeus A. Reamy, of Cincinnati. 18. Indications for Abdominal Section in the Treatment of Puerperal Pelvic Inflammations, by Dr. R. B. Maury, Memphis, Tenn. 19. A Study Relative to the Functions of the Reproductive Organs in American Indian Women, by Dr. Andrew F. Currier, of New York. 20. The Immediate Closure of Laceration of the Cervix, by Dr. Cornelius Kollock, of Cheraw, S. C. 21. The Conservative Treatment of Pelvic Tumors and Diseases, by Dr. Eugene Gehrung, of St. Louis. 22. The Anatomical Relations of the Lacerated Perineum to the Mechanics of its Causation, by Dr. Edward Reynolds, of Boston.

Third Day, Thursday, September 24th.—Morning Session: 23. In Memoriam, Dr. Fordyce Barker, by Dr. James R. Chadwick, of Boston. 24. Ureteritis in the Female, by Dr. Matthew D. Mann, of Buffalo. 25. The Surgical Treatment of Retroversion and Prolapse of the Uterus, by Dr. Paul F. Mundé, of New York. 26. A Paper by Dr. Theophilus Parvin, of Philadelphia. 27. Series of One Hundred Laparatomies: My Mistakes and Failures, by Dr. A. Palmer Dudley, of New York. *Afternoon Session:* 28. Laparotomy in Trendelenburg's Posture, with Exhibition of a New Operating Table, by Dr. Clement Cleveland, of New York. 29. The Electrical Treatment of Uterine Fibroids in England, by Dr. George Keith, of Brooklyn. 30. Diabetes Mellitus Gravidarum, by Dr. Henry D. Fry, of Washington. 31. A Successful Porro Operation, by Dr. R. Stansbury Sutton, of Pittsburg, Penn. 32. An Argument against the Stem Pessary, or so-called Drain Tube, by Dr. Egbert H. Grandin, of New York.

PROGRAMME of the fourth annual meeting of the American Association of Obstetricians and Gynecologists, to be held in the hall of the Academy of Medicine, 17 West 43d street,

in the city of New York, Thursday, Friday, and Saturday, September 17th, 18th, and 19th, 1891 :

First Day, September 17th, 1891.—1. Address of Welcome and Response. 2. Post-partum Hemorrhage: Its Etiology and Treatment, by Dr. Aug. P. Clarke, of Cambridge. 3. Removal of the Kidney for Disease, with Cases, by Dr. William J. Asdale, of Pittsburg. 4. Another Method of Palpation of the Kidney, by Dr. Robert T. Morris, of New York. 5. Is a Child Viable at Six and a Half Months? by Dr. Llewellyn Eliot, of Washington. 6. Some of the Dangers Incident to Delay in Operating for Uterine Myomata, by Dr. Isaac S. Stone, of Washington. 7. How Should we Proceed when Abdominal Tumors are Complicated by Pregnancy? by Dr. James F. W. Ross, of Toronto. 8. Thoughts pertaining to Maternal Impressions during Gestation, by Dr. William S. Stewart, of Philadelphia.

Second Day, September 18th, 1891.—9. Removal of the Uterine Appendages, with Results, by Dr. Milo B. Ward, of Topeka. 10. A Few Abdominal Sections selected from my own Work, by Dr. William H. Myers, of Fort Wayne. 11. The Prevention of Secondary Peritoneal Adhesions by an Aristol Film, by Dr. Robert T. Morris, of New York. 12. The President's Annual Address (12 o'clock M.), by Dr. Adam H. Wright, of Toronto. 13. Asepsis in Abdominal and Pelvic Surgery, by Dr. William H. Wathen, of Louisville. 14. A Case of Cholecystotomy and Cholelithotripsy: Death from La Grippe on the Twenty-first Day, by Dr. William Wotkins Seymour, of Troy. 15. Report of Cases of Cholecystotomy with Special Reference to Treatment of Calculus Lodging in the Common Duct, by Dr. A. Vander Veer, of Albany. 16. Femoral and Ventral Hernia in the Female, by Dr. Henry O. Marcy, of Boston.

Third Day, September 19th, 1891.—17. Some Moot Points in Ectopic Gestation, by Dr. X. O. Werder, of Pittsburg. 18. Ectopic Pregnancy: When Shall we Operate? by Dr. Rufus B. Hall, of Cincinnati. 19. Trendelenburg's Posture in Gynecology, with Demonstrations, by Dr. Florian Krug, of New York. 20. Peritonitis, by Dr. Mordecai Price, of Philadelphia. 21. Peritonitis, by Dr. Edwin Ricketts, of Cincinnati. 22. Manual Rectification of Certain Malpositions of the Head in Labor, by Dr. William H. Wenning, of Cincinnati. 23. A Plea for Early Hysterectomy and Puerperal Hysterectomy, by Dr. Joseph Price, of Philadelphia. 24. Observations on the Surgical Management of Pelvic Abscess, by Dr. Charles A. L. Reed, of Cincinnati.

Dr. Lewis S. McMurtry will present a paper—subject not yet announced

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ORIGINAL COMMUNICATIONS.

TUMORS OF THE CLITORIS.¹

BY

GRACE PECKHAM, M.D.,

Senior Attending Physician in the Gynecological Service of the Dispensary of the New York Infirmary; Associate Attending Physician to the New York Infirmary for Women and Children; President of the Alumnae Association of the Woman's Medical College of the New York Infirmary; Member of the New York Academy of Medicine, etc.

(With colored plate and twelve other illustrations.)

THE morbid conditions to which the clitoris is subject are: congenital malformations, simple hypertrophy and elephantiasis, carcinomatous and benign tumors.

The condition of congenital malformation, or hermaphrodisism, does not present itself for consideration in this paper. In Eastern countries writers speak of the enormous hypertrophies of the clitoris as of common occurrence. It is the general belief that hypertrophies of this organ are common

¹ Case and paper originally presented to the Alumnae Association of the Woman's Medical College of the New York Infirmary.

among prostitutes. Parent-Duchalet, in his work on "Prostitution in Paris," states that in six thousand registered prostitutes there were but three in whom this organ was enlarged, and these were not among those who indulged greatly in sexual excesses. In the thousands of cases seen in dispensary and hospital practice, I can recall but one case of abnormal enlargement of the clitoris, and that was in a Jewess. I think most gynecologists in the United States have had a similar experience.

As for malignant disease of the clitoris, that is not of infrequent occurrence, the clitoris becoming involved as the disease extends from other parts of the vulva. Carcinoma commencing in the clitoris and involving that organ alone, judging from the literature on that subject, is very uncommon. Although not properly belonging to the subject of this paper, which has for its object the consideration of non-malignant tumors, I call attention to the report of a most remarkable case of melanotic tumor (cancer of the clitoris) published in the *Lancet*, 1856, vol. ii., page 513

No one who has not had attention called to the subject would imagine the extreme rarity of tumors of the clitoris. The cases gathered together in this paper extend over the century, and make, with a very few exceptions, the complete list to be found of non-malignant growths. Even with some of these one cannot be sure, with the incomplete pathological knowledge of earlier days, that some are not malignant. Dr. Caradec says that they are not even mentioned in such classical works as Cruveilhier, Lebert, Vidal, and Nélaton. Boyer remarks that it is sometimes the seat of tumors; his son says that its diseases are little known. Velpeau, in his extensive work, says that the clitoris is subject to all kinds of degenerations, and that it is frequently amputated for voluminous tumors. He cites one case of Dr. Schoenfeld, similar to the one of Dr. Caradec which is given below. He, himself, says that he had never met with one before, and upon inquiry among his professional friends he found but one who had ever seen anything of the kind.

Dr. Meigs says that after having been engaged many years quite extensively in obstetric practice, and in the management of the diseases of women and children, he has never seen or

heard of more than one case of excessive magnitude of the clitoris. This case is the one quoted.

Most of the gynecological works pass over the subject. No mention is made of them in Mundé, in Mann's "American System of Gynecology," in Thomas—although he cites the case of syphilitically enlarged clitoris reported by Dr. W. Gill Wylie—Scanzoni, Winckel, and others.

CASE I. (see colored plate).—My attention was first called to this subject by a woman who presented herself at the gynecological clinic of the Dispensary of the New York Infirmary for Women and Children, on April 27th, 1886. She gave the following history: She was 30 years old, a native of the United States, had been married nine years, had had five children and no miscarriages. Parents were healthy; had no growths or tumors. Her own health was always good, although her labors were severe. After her second child was born she noticed that the clitoris was enlarged to the size of her thumb. The midwife who attended her told her that it was nothing which should give her alarm. Three days before she presented herself at the clinic she felt sticking pains in it. Previous to that she had never experienced any pain or inconvenience from it. It was not painful even then, except when she walked, when there were pains as if pins were sticking into it.

Upon examination there was seen a tumor of vivid purplish tint, the size of a hen's egg, occupying the site of the clitoris and replacing it. The labia minora were flattened and spread out upon it. The tumor, which upon palpation showed that it contained a fluctuating fluid, was exceedingly sensitive to touch. The uterus was retroflexed and tender, and, although it was not five weeks since her last confinement, it was not at all enlarged. At the right of the anus were two small fistulous tracts, which she said had been there since the birth of her first child, occasionally closing, occasionally discharging. No rectal opening was discovered. She gave no syphilitic history.

The next day the tumor became more tense and painful. She could not leave her family to go into the hospital for an operation for its removal, nor could she have it done at home; therefore a palliative measure had to be adopted, and a free

incision was made at the most dependent portion of the tumor. A four-per-cent solution of cocaine was first applied at the point where the incision was to be made; and notwithstanding that the cocaine had rendered it insensible to the touch, the

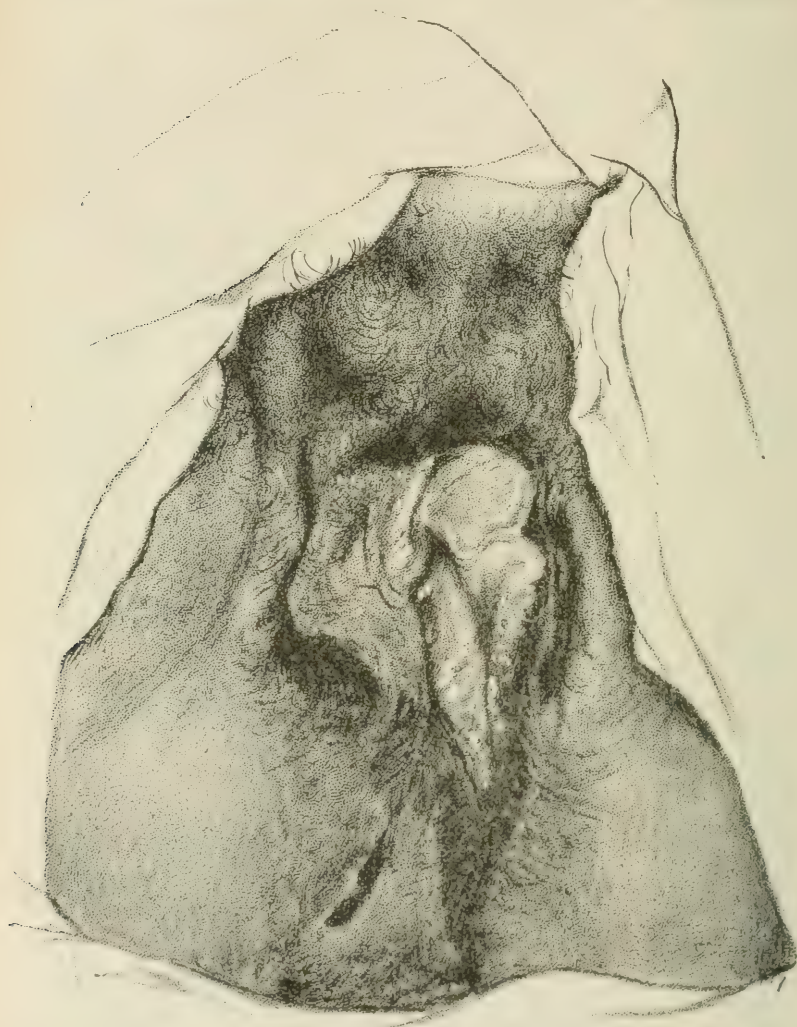


FIG. 1.

pain was excessive. A thick, chocolate-colored fluid, such as is seen sometimes in ovarian cysts, or like the blood pent up in uterus or vagina from atresia, poured out. There seemed to be about two ounces. There was left a thick and shrivelled-

up sac. Any pressure made upon the sac to further the discharge of its contents gave exquisite pain and set the woman off into hysterical paroxysms. A few days after she came to the clinic, saying that the sac filled once again and she poulticed it, when it discharged. Since then she had had no trouble. An examination showed the tumor hanging, shrivelled, and reduced to half its former size.

It was a year or more before I saw the woman again. Then the tumor had disappeared. How completely the parts had returned to normal, Fig. 1, from a photograph taken a year or two after, shows.

The following cases are, I think, all that are to be found in literature.

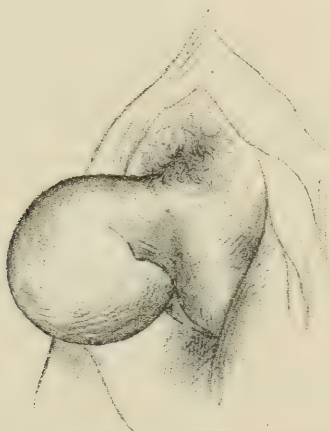


FIG. 2 (Meigs).

CASE II.—Mr. Symes, in his "Reports of Surgical Cases,"¹ gives the following case of "Encysted Tumor of the Clitoris": Mrs. M. was admitted to Minto House on account of a bad-looking tumor growing at the orifice of the vagina, the tumor lying encysted between the skin and lower surface of the clitoris. It was dissected out entire, notwithstanding the extreme thinness of the cyst wall and the almost fluid consistence of its contents, which were of a very dark color. The patient experienced no trouble subsequently.

CASE III.—Dr. Meigs reports a case² of a woman who, from a

¹ Edinburgh Medical Journal, 1838, vol. i., p. 387.

² Proceedings of the American Philosophical Society, 1844, p. 129. "Diseases and Special Hygiene of Females." Philadelphia, 1845. Ed. by C. J. Meigs.

fall, fourteen years before, had received an injury to the clitoris, since which there had been a constant increase in its size. The tumor was pendulous from the pubis, and consisted of skin and genito-mucous tissue. It formed a close sac, filled with a fluctuating mass. Opened with a lancet, a dark-red, viscous fluid escaped, such as comes from an imperforate vagina. Sac shrunk like a scrotum. Twenty-two ounces were withdrawn, to the great relief of the patient. It filled again, and was afterwards amputated, at which time it was the size of the head of a child 2 years old. (Fig. 2.)

CASE IV.—Paget gives a case of fibro-cellular tumor.¹ Woman 34. Had for three or four years a sloughing fibro-

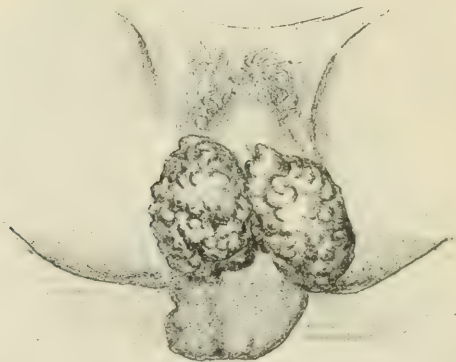


FIG. 3 (McClintock).

cellular tumor from right wall of vagina and right nymphæ, flask-shaped, five inches in diameter, and attached by a pedicle one and one-half inches in length and thickness. Sloughed and ichorous in lower part. Punctured lower part, and it filled again. Removed, and the parts healed.

CASE V.—Dr. McClintock, in his work on “Diseases of Women,” gives this case, which he calls “Syphilitic Hypertrophy of the Clitoris.” A country woman, aged 30, was seen in March, 1856. Years before had contracted syphilis from her husband. Two years before, nymphæ began to enlarge; in the last few months they had increased rapidly in size.

¹ “Lectures on Surgical Pathology,” 1870, p. 458.

Three large tumors hung down from the genital fissure, of a pinkish-red color, slightly edematous, and very tuberculated. The centre tumor was the clitoris; it was the size of a turkey's egg; resembled somewhat the procident uterus. On either side of this were the nymphæ, of immense magnitude, and of very irregular figure. The fissures and clefts of these growths were abraded, and yielded an abundant strong-smelling discharge. The woman was in the seventh month of her second pregnancy, and, lest the tumor should interfere with parturition, it was deemed advisable to remove it. This was done, first by ligating it and then using the scalpel. The parts healed. (Fig. 3.)

CASE VI.—In his work on "The Diseases of Women," Churchill quotes from the *Medico-Chirurgical Review*, vol. xxi., p. 489, this case: Patient, aged 40, had a tumor of the clitoris, pyriform in shape, eight inches long. The pedicle of the tumor was firm, about the size of the wrist, the most dependent part of it hard and fully larger than two fists. Nymphæ were elongated and covered with dry, smooth, colored cuticle, as was the clitoris. Nymphæ were studded thickly with warty excrescences. The mucous membrane, having lost its secreting power, was smooth and dry, and was converted into an opaque, insensible cuticle. The sensibility was impaired, but not lost. The tumor was solid fibrous structure.

Disease was of two years' standing, and appeared after a course of mercurial treatment for syphilis. The tumor was removed by ligating.

CASE VII.—Dr. T. A. Emmet cites a case.¹ He saw the woman in 1866. She was 25 and had been married two years. First noticed the tumor when she was 16 or 17. Left labium had gradually increased in size. It felt sore, but never painful. Right labium and nymphæ were healthy. Diseased labium was hard and rough, like a piece of sole leather, while the enlarged clitoris was smooth and not unlike a fibro-cystic polypus in density. The uterus was enlarged, retroverted, and fixed from old cellular inflammation, and the cervix was just within the vulva. Two years after the

¹ "Principles and Practice of Gynecology," p. 623.

growth had increased very little, but her general health remained impaired. (Fig. 4.)

CASE VIII.—Mr. Shaw had a case of “Excessive Enlargement of the Clitoris.”¹ It was a fibro-cellular growth, weighing four pounds, removed from a woman aged 54. It was studded with warty vegetations, bilobular, and presented in the median line a depression, considered to be that found beneath the prepuce of the clitoris. The base of the tumor was broad. It was freely supplied with blood vessels in the lower part, in which the clitoris was lost.

Microscopic examination showed that the upper portion of



FIG. 4 (Emmet).

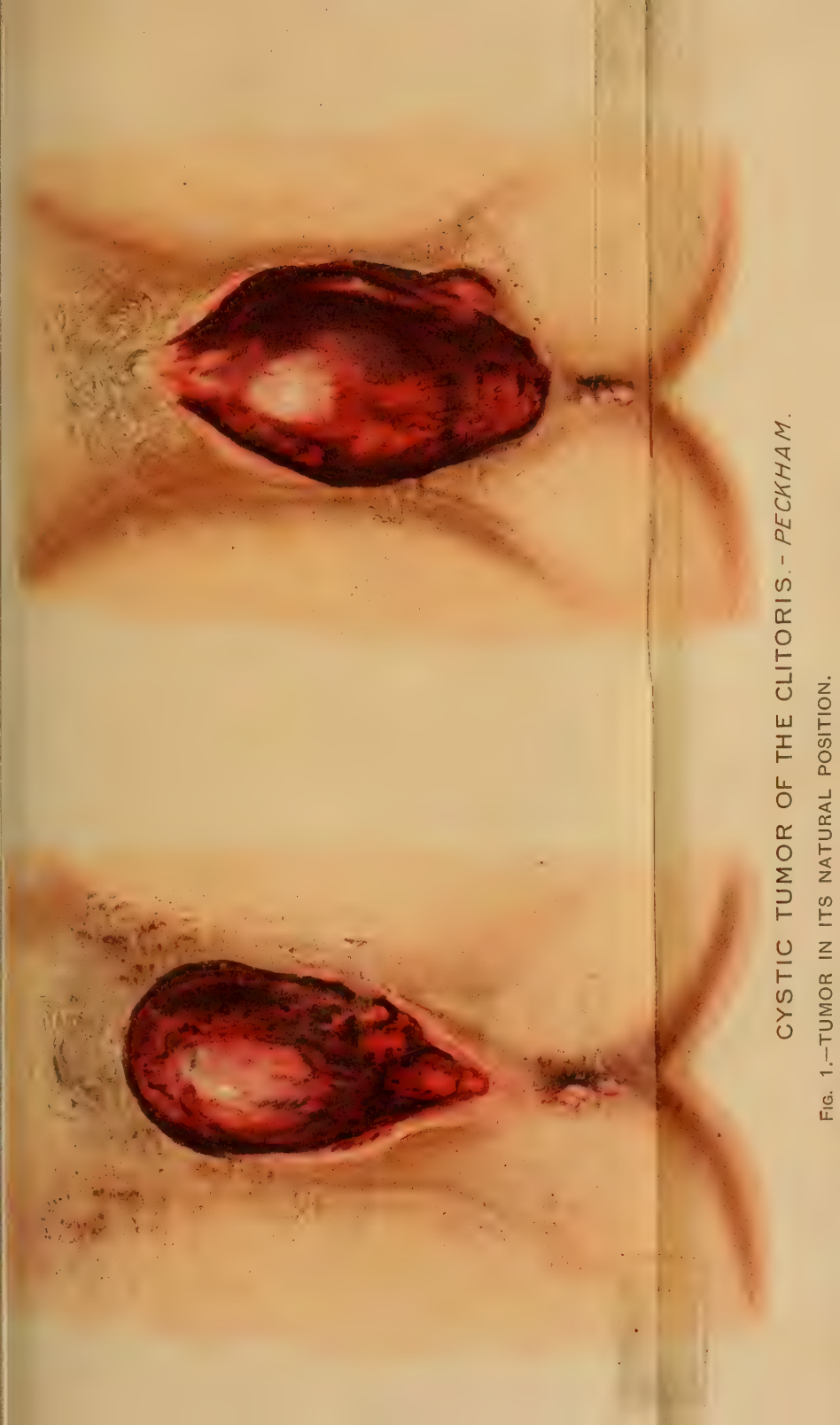
the tumor was composed of the cellular tissue of the mons veneris, but in the other parts there were nucleated cells having a tolerably regular outline and pale white fibres.

The tumor had existed seventeen years. Neither its formation nor its subsequent growth was attended with any pain, and the only trouble was from its great size and weight.

The patient made a good recovery after its removal. No syphilitic history was mentioned by the writer.

Mr. Shaw adds that in the Pathological Museum of the

¹ Transactions of the Pathological Society of London, vol. iv., 1853, p. 207.



CYSTIC TUMOR OF THE CLITORIS. - PECKHAM.

FIG. 1.—TUMOR IN ITS NATURAL POSITION.

Middlesex Hospital were two specimens of a similar disease, developed in the covering of the genital apparatus, and distinguished by the same characteristic warty excrescences.

CASE IX.—A case observed at the surgical clinic at Bonn is given in a translated report by Dr. Rieken.¹ A woman aged 56, history good. A month after her marriage she felt a sensation of heaviness about the genitals, and discovered a body four inches or more depending from the vagina. This gave her no inconvenience until a short time before she was seen, although it gradually increased in size. A month before, an ulcer secreting a fetid discharge appeared, which greatly increased in size. At this time the weight of the tumor and the ulceration occasioned her the greatest pain, especially when she walked. The prepuce of the clitoris was considerably hypertrophied and degenerated. It surrounded a great excrescence, resembling a condyloma, completely covering the genitals, and was the clitoris itself enlarged and degenerated. It was of a bright red color. Its external membrane was very firm and solid. It had lost its mucous character and was abraded by friction, or dry and rough. It was covered with fissures and irregularities, as was the enormous fetid ulceration already mentioned.

It was removed successfully by ligature and the knife. The deformity of the external parts disappeared, and, with the exception of the cicatrix, resumed their normal appearance. The tumor after its removal weighed six pounds.

The author gives a long description of its gross appearance, but no microscopical examination. It was composed of a very thick parenchyma, tendinous and fibrous, white, shining, and solid in parts. It had a great number of blood vessels, arterial and venous.

The author mentions that an analogous case was observed by M. le Prof. Heyfelder, and published in the Transactions of the Academy of Leopoldino-Carolienne des Naturalistes.

CASE X.—A case of "Extraordinary Enlargement of the Clitoris" is given by Dr. Richard Simmons.² The patient, aged 30, was seen February 28th, 1800. The clitoris was en-

¹ Journal de Médecine, de Chirurgie, et de Pharmacie, Bruxelles, 1865, vol. xli., p. 219.

² Medical and Physical Journal, London, 1801, p. 1.

larged to an enormous size, gradually increasing in bulk from its stem at the pubis. Circumference at the largest part was fourteen inches, at the stem five inches, length nine inches. It was smooth and fleshy, its upper surface covered with cuticle, like the skin in color. The bottom of the tumor and the under surface were very unequal, being made up of clusters of swellings of globular form, of different sizes, from those of a large grape to the smallest; the color of these was redder, somewhat transparent and shining, but not inflamed

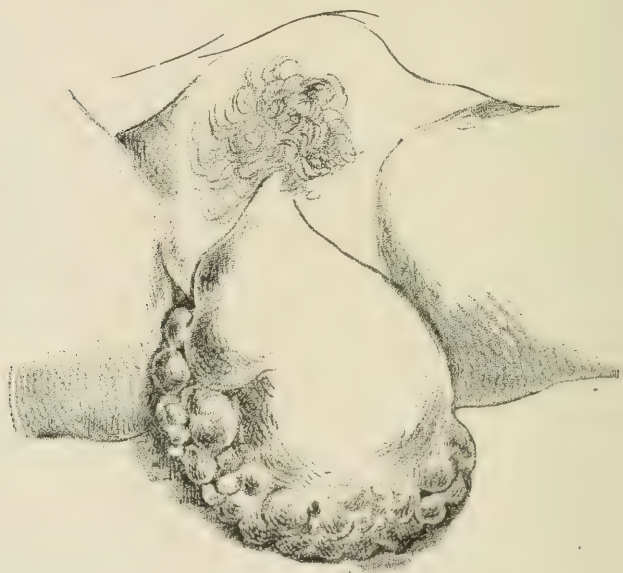


FIG. 5 (Simmons).

or painful to the touch. The nymphæ and labia on both sides, especially near the perineum, appeared as if taking on the same action and felt more tender, probably due to the weight and pressure. Her general health was good. She confessed to slight venereal disease at 20.

Four years before, without any apparent cause, the clitoris began to enlarge, gradually increased in size for three years, but the last year it had increased very rapidly. (Figs. 5 and 6.)

The tumor was removed by the knife successfully, and the labia resumed their natural appearance.

CASE XI.—Dr. Auchincloss, in his report of cases treated in the surgical ward of the Glasgow Royal Infirmary,¹ gives this case: Patient, aged 20, had a clitoris as large as a hen's egg, exceedingly hard. On its surface was an irregular superficial foul ulcer the size of a shilling. Right nympha enlarged and indurated, attached by a broad, thickened base two and a half inches in extent. The mucous membrane at its inner surface

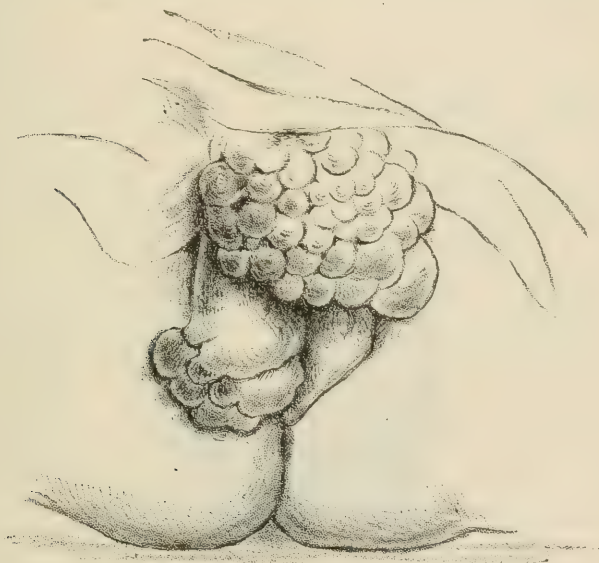


FIG. 6 (Simmons).

was inflamed and ulcerated. Left nympha was equally enlarged and had likewise broad attachments. The mucous membrane lining the vagina was covered with warty excrescences. The labia were free from hardness and swelling. The clitoris was half the size of the thumb as long as she could remember. Three years before, it began to enlarge. For twelve months shooting pains. Ulceration had occurred in the last three months. During the last three weeks she had

¹ Glasgow Medical and Surgical Journal, 1829, vol. ii., p. 16.

had a great increase in the pain ; could not sleep ; rigors followed, with cold perspiration and a quick pulse. The whole mass was removed, including half an inch of the urethra. The patient recovered. The writer says that he supposed it to be malignant, but upon section the clitoris and nymphæ presented a uniformly hard, dense surface, without the striæ peculiar to cancerous structure.

CASE XII.—W. M. Lewis¹ reports a case : Patient was seen March 5th, 1810. The clitoris was enlarged so that it concealed the vulva. Warts were seen beneath the diseased mass.



FIG. 7 (Lewis).

There was an offensive and copious discharge. Six months before, the woman had received a syphilitic infection, since which the clitoris had continued to enlarge. The syphilis improved under mercurial treatment, but the clitoris was no smaller. It was removed successfully by the knife. (Fig. 7.)

CASE XIII.—Dr. W. Penn Buck presented to the Philadelphia Pathological Society² a tumor of the clitoris. The

¹ Medical and Physical Journal, 1811, xxv., p. 236.

² Philadelphia Medical Times, October 16th, 1871.

patient was 28. It had grown for three years. At the end of the first year it was the size of a hen's egg. It remained stationary for nine months, and then grew rapidly. It was three inches in diameter at the time of its removal.¹

CASE XIV.—Dr. Albert H. Smith reports² the case of a woman aged 40, married, who had a tumor of the clitoris the size of a walnut. She was pregnant three months. The tumor was removed by the cauterization and the wound healed.

CASE XV.—Mr. Symes, in his "Reports of Surgical Cases,"³ speaks of the removal of a tumor, the size of a cherry, from the clitoris of a child. He calls attention to the unusual occurrence.

CASE XVI.—Dr. W. Gill Wylie gives a case of syphilitic hypertrophy of the clitoris.⁴ Woman admitted to Woman's Hospital in 1872. Three years before, had syphilis. Soon after noticed a small tumor at the upper part of the vulva, which steadily increased in size. At first it gave her no inconvenience; afterwards interfered with locomotion. Upon examination it was found that she had a large tumor the size of an orange. It was removed by Dr. T. G. Thomas with the electric cauterization. The woman died thirteen days after, of peritonitis due to salpingian dropsy.

CASE XVII.—Dr. F. J. Bumstead reports a case, with photograph of the tumor after removal,⁵ from a German woman aged 20, at Charity Hospital, January, 1868. Three years before, had a chancre. There were cicatrices of older eruptions and condylomata in the neighborhood of the genital organs. There appeared, a year ago, an enlargement at the upper commissure of the vulva, which continued to increase until two or three months ago, when it became stationary. The tumor was larger or smaller, according to the length of time that she had been standing or sitting. It was never painful, except in warm weather, when it became excoriated and sore. The tumor was tubercular, lobulated, and

¹ Reported also in *Photographic Review of Medicine and Surgery*, 1871-72, vol. ii., p. 22.

² *Transactions Philadelphia Obstetrical Society*, p. 41.

³ *Edinburgh Medical and Surgical Journal*, 1838, p. 387.

⁴ *THE AMERICAN JOURNAL OF OBSTETRICS*, 1873-74, p. 43.

⁵ *Photographic Review of Medicine and Surgery*, 1870-71, vol. i., p. 11.

attached to a pedicle, which was evidently the hypertrophied clitoris. The growth was attached to the right labium minus. The left labium minus was pierced with four openings or slits of varying size, the largest admitting the passage of two fingers. Origin unknown. No history of inflammation except the chancre the year before. Both labia majora and minora were greatly hypertrophied, and there was no line of demarcation between the tumor and the surrounding healthy tissue. The clitoris, surrounded by the lobulated mass, protruded from between the labia and was three inches in

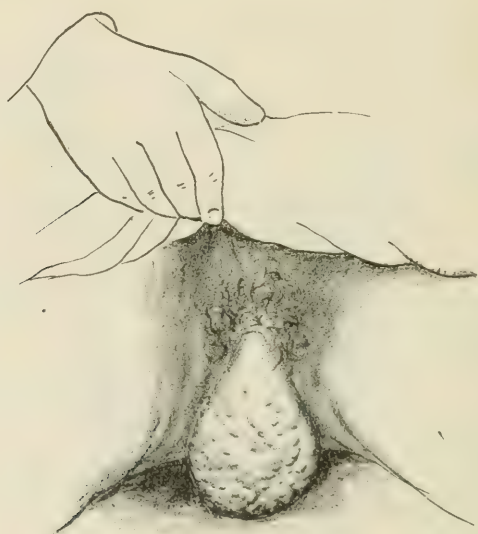


FIG. 8 (Bumstead).

length; had never become erect or turgescient. The vagina was filled with an accumulation of non-specific, vegetating growth. The mass was six and a half inches in circumference. The tumor, including the labia minora, was removed. The patient soon left the hospital, and the subsequent history of the case is unknown. Microscopic examination showed the growth to be fibro cellular. (Fig. 8.)

CASE XVIII.—Dr. T. H. Caradec¹ gives the case of a

¹ Union Médicale, Paris, 1861-62, 2 s., xii., p. 116.

woman aged 24, seen July 17th, 1861. Five weeks before she fell, and eight days after discovered the tumor, situated between the nymphæ and covered by them. The tumor was of the size of an orange, and was red, hard, firm, and elastic. On its surface were scattered some ulcerations. No pain when it was touched. On the posterior and inferior portion were a large number of vegetations, which were sessile, slightly moist, and of a red color. Non-specific. It blocked the vaginal orifice without preventing menstruation, and lay upon the urethra. The tumor replaced the clitoris. The

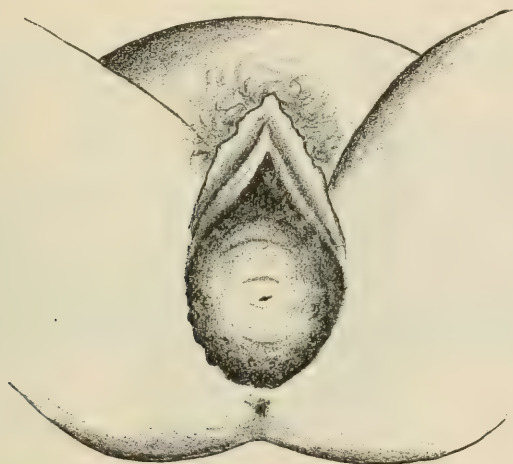


FIG. 9 (Caradec).

tumor was successfully removed; was very easily enucleated, without any hemorrhage, and weighed twenty grammes. It was a whitish, shining substance, resembling lard. It was lobulated, and contained in meshes a fibro-cellular substance. There was no amount of liquid, even in the parts which gave the sense of fluctuation. Microscopic examination showed fibres of cellular tissue in network. A small quantity of fibro-plastic tissue—some with one or two nuclei and nucleoli, others with more—some adipose cells, and a small number of blood vessels. (Fig. 9.)

CASE XIX.—*Hypertrophy of the Clitoris and the Areolar*

*Tissues surrounding it.*¹ The woman had been a prostitute. Entered Charing Cross Hospital under the care of Mr. Canton. Tumor was four inches in length and three inches in circumference. It sprang from the upper commissure of the vulva. It presented on the right side a deep fissure, which marked off a smaller lobe. Midway between this point and the lower extremity was another fissure, not so deep as the other, marking off another lobe. The skin was dusky, like the labia, and presented pits and depressions, apparently the orifices of sebaceous follicles. In the first fissure there were ulcerated spots. Between the left labium minus and the



FIG. 10.

body of the tumor there was a long line of ulceration, as also between it and the labium majus. From preceding soreness the larger labium had become incorporated into the corresponding side of the swelling. The under part of the tumor was covered, for about one-half of its extent, with a pseudo mucous membrane. The tumor was removed and the parts healed.

The microscopical examination of the tumor showed that, with the exception of epithelium, it consisted of a dense web,

¹ Lancet, 1856, vol. ii., p. 513.

thick and matted, and having no special direction of the fibres, of white and yellow fibrous tissue, neither of them perfectly typical in its structure. The epithelium was scaly, the cells of very different forms. The texture of the tumor reminded one very much of the middle coat of arteries, only there was less elastic tissue. The under part of the tumor presented the glans clitoridis, considerably elongated, but the bulk of the growth consisted obviously of hypertrophied subcutaneous tissue of the prepuce and of the folds which pass from it to the labia minora. (Fig. 10.)

CASE XX.—In the *India Journal of Medical and Physical Sciences*, of Calcutta, 1839, n. s., iv., 534, is a case re-

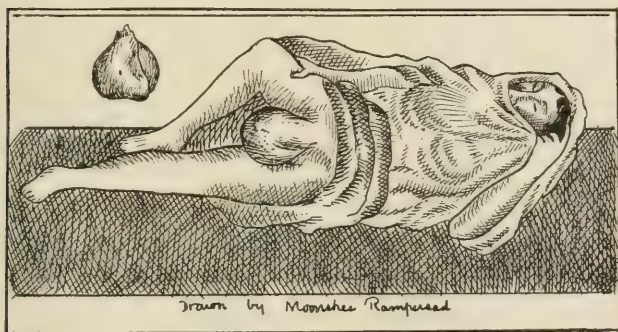


FIG. 11 (Rameshur Awusthee).

ported by Rameshur Awusthee, in charge of the Patna Dispensary. (Fig. 11.) He says:

“On the 22d of April, 1839, a Mohammedan woman, aged 22, residing in Patna, presented herself at the dispensary with a tumor attached to the glans clitoridis, from which she had been suffering great physical inconvenience and mental distress for the last three years. During the last twelve months it had grown so rapidly and assumed such an inconvenient size, resembling a large orange, as to occasion, by the pressure of its weight over the orifice of the urethra, much difficulty in voiding urine, so that she was obliged to lift it up by her hands at the time of passing water. The tumor was removed, and the operation was followed by much hem-

orrhage from a small arterial branch, which was instantly secured by a ligature. The wound healed in a few days by first intention, and the patient was discharged from the list of in-door patients of the dispensary ten days after date of operation."

CASE XXI.¹—Mr. Marsden reports a case of tumor of the clitoris. Patient, a married woman of 24, had venereal disease at 14; the growth appeared at 21. Tumor weighed thirty ounces. Successfully removed by ligation and ablation. Supposed to be elephantiasis. (Fig. 12.)



FIG. 12 (Marsden).

Dr. Heyret² also gives two cases of tumors of the clitoris cured by ablation.

In considering the cases which have been presented the following points claim attention:

1. The incompleteness of the pathology of tumors of the clitoris. This is of course due to the rarity of their occurrence. It is with great regret that the case which suggested this paper should not furnish data in this particular. The puncture of the cyst was supposed to give only temporary

¹ *Lancet*, London, 1857, ii., 196.

² *Mémoires de la Société de Médecine de Strasbourg*, 1870-72, p. 177.

relief, and that ablation would be necessary, at which time an histological examination was purposed; but the complete degeneracy of the tumor led to relief from it, in which respect it was unlike the cases reported similar to it. It is greatly to be hoped that in the future this subject, the pathology and histology of tumors of the clitoris, will receive the most careful attention.

2. The relation of these tumors to syphilis. There is no doubt that they occur in a majority of cases in which there has been specific disease. There seems to be a causal relation between these tumors and those ulcerative lesions of the vulva variously called lupus or esthiomène.

3. Aside from the venereal diseases which most writers recognize as the most potent factor, Graily Hewitt is quoted as saying eczema of the skin in the neighborhood, and chronic inflammatory conditions of the surrounding parts, will occasion hypertrophy of the clitoris. The cases cited show that they occur among the lower class of women. It is also suggested that a tumor already existing takes on more active growth during pregnancy. Some of the tumors were removed while the patients were pregnant. In the case which is presented it was only five weeks since confinement. They occur mostly in women in the midst of child-bearing.

4. The occurrence in so many cases of warty excrescences and vegetations is noteworthy.

5. The tumors are generally pedunculated.

6. Singular lack of pain and inconvenience, considering the weight of tumors and the sensitiveness of the organ.

7. The almost universal success attending their removal, which has been done mostly by means of ligature and the use of the cauterium and the knife.

8. The return of the parts to their normal condition, and the disappearance of deformity after the removal of these tumors, even though they were of great size and weight, is very remarkable.

"THE MADISON," 25 MADISON AVENUE,
August, 1891.

BIBLIOGRAPHY.

Aerztlicher Bericht des kais.-kön. allgemeinen Krankenhauses zu Prag (1878), 1880, 254.

- Glasgow Medical Journal, 1829, ii., 165-167.
 Gazette Médicale de Strasbourg, 1875, 3 s., iv., 133-137.
 Photographic Review of Medicine and Surgery, 1870-71, i., 11 ; 1871-72, ii., 22.
 Lancet, London, 1856, ii., 650 ; 1857, i., 452 ; 1857, ii., 196.
 Union Médicale, Paris, 1861, 2 s., xii., 115-122.
 Mémoires de la Société de Médecine de Strasbourg, 1872, ix., 177-187.
 Proceedings American Philosophical Society, Philadelphia, 1844, iv., 129.
 Transactions of Pathological Society of London, 1852, 207-209 ; 1857-58, ix., 305.
 Medical and Physical Journal, London, 1801, v., 1 ; 1811, xxv., 236-238.
 Philadelphia Medical Times, 1871, ii., 33.
 India Journal of Medical and Physical Sciences, Calcutta, 1839, n. s., iv., 534.
 Journal de Médecine, de Chirurgie, et de Pharmacologie, Bruxelles, 1865, xii., 218-228.
 Transactions of Philadelphia Obstetrical Society, 1877 ; Philadelphia, 1878, v., 41-43.
 Edinburgh Medical and Surgical Journal, 1838, i., 387.
 PAGET: Lectures on Surgical Pathology, ii., 105, or third edition, London, 1870, 458-467.
 THE AMERICAN JOURNAL OF OBSTETRICS, New York, 1873-74, 43 ; 1878, xi., 160-162.
 FÖRSTER: Handbuch der Speciellen Pathologischen Anatomie.
 Annales médico-chirurgicales, Françaises et étrangères, Paris, 1886, ii., 38.

A CASE OF CONGENITAL CYSTIC ELEPHANTIASIS.

BY

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(With one illustration.)

CONGENITAL elephantiasis is not a rare condition, but the occurrence of the cystic form is unusual, and the specimen in this case unique. The fetus presents a pathological condition of great interest from the obscurity in the etiology and from

the absence of any changes in the mother which would account for such a condition.

The specimen is that of a child born at about the thirty-second week. It weighed at birth five and a half pounds and measured forty centimetres in length. The head measured thirty-three centimetres in circumference. Beneath the right arm an elastic, fluctuating tumor extends from the axilla to the crest of the ilium, increasing the circumference of the thorax to thirty-eight and five-tenths centimetres. The sur-



face of this tumor is smooth, and marked here and there with superficial furrows which correspond to the septa between the cysts of which the tumor is composed. Some of these cysts contain fluid and others colloid material. The left lumbar region is occupied by a tumor of similar consistence, and small, elastic tumors, apparently cystic, cover the extensor surfaces of the arms and dorsal aspect of the fingers and toes. The left thigh and the upper part of the right are enlarged by a hyperplasia of connective tissue. The left thigh measures seventeen and a half centimetres in circumference, and

presents here and there sessile, cystic tumors in addition to the other changes. The deep reddish discoloration of the skin of the lower extremities is due to arterial and venous ectasy. Sections were prepared from a tumor on one of the fingers, from the large tumor of the thorax, from the left leg, and from the placenta and cord. The section from the finger represents the constituents of the various tumors, although macroscopically there is a difference between the tumors of the extremities and those on the trunk. The latter are composed of large cysts with thin walls, while the former contain dilated lymph spaces surrounded by thickened walls and hyperplastic connective tissue. These spaces are lined with proliferated endothelium and cylindrical epithelial cells, and in some instances they are filled with broken-down lymph corpuscles. Throughout the section areas appear in which the fibres of connective tissue are replaced by a homogeneous, granular tissue beset with nuclei in a state of granular degeneration. There are no branched cells indicative of myxomatous tissue of mature growth. The section from the leg shows a hyperplasia of connective tissue; the number of vessels is increased, and their neighborhood is marked by a small-celled infiltration. The lymph spaces are dilated, but apparently are not in communication. The fat tissue exists in normal proportions.

The placenta is friable, but normal in size, thickness, and color. Although macroscopically there are no pathological changes, under the microscope, in some places, the ground substance of the villi has increased and combined with the degenerated decidual cells, presenting the structureless appearance which, in a more developed form, is seen in myxomatous placenta. There is no inflammatory infiltration. The section of the cord reveals dense infiltration around the vessels, with thickening of the media and adventitia of the arteries.

The contents of the cysts which compose the larger tumors is a serous fluid, in some instances mixed with blood. It contains here and there large, transparent, faintly granular cells with multiple vesicular nuclei. These are probably endothelial cells in a state of mucin degeneration. The fetus showed no ascites and no abnormality of the internal organs.

The mother of the child was admitted to the Lying-in

Charity November 15th, 1890. The history of the case is as follows :

“Menstruation began at 15. Her menses have been regular, occurring every four weeks. She has had one child, now $2\frac{1}{2}$ years old ; labor was natural, and the pregnancy and puerperium without complications. There is no history of tubercular nor specific disease, and no history of abortion. She computes the course of her present pregnancy as beginning soon after May 19th, the date of her last menstrual period. This is a miscalculation, as the child is evidently in the eighth month. At the beginning of June (probably the beginning of the third month) she noticed an unusual swelling of the abdomen.”

The distention gradually increased, and when the gravida presented herself at the hospital her abdomen measured one hundred and four centimetres in circumference. At this time it was impossible to detect the fetal heart or to make out the position of the child. Hydramnios was diagnosticated. There had been no escape of fluid or blood during her pregnancy. The urine was acid ; specific gravity 1.015. No albumin. Quantity normal. The labor was natural, the vertex presenting in the first position, the legs extended upon the abdomen. The child lived thirty minutes.

The pathology of cystic elephantiasis is to be studied in the light of various hypotheses. Busey (AMERICAN JOURNAL OF OBSTETRICS, 1877, vol. x., No. 1) advocated the theory of obstruction with dilatation of the lymph channels and secondary hyperplasia of the connective tissue. It has been demonstrated, however, that obstruction of the lymphatic system from pressure will not produce a condition of lymphatic ecstasis as long as anastomosis exists and the quality of the blood remains normal. Moreover, the hypertrophy of the lymphatic walls and thickening of the cyst walls cannot be considered as the result of stasis alone, nor, on the other hand, as the result of a primary inflammation of the surrounding subcutaneous tissue. In a case reported by Neelsen (*Berlin. klinisch. Wochenschr.*, 1882, xix., 36) the evidences of obstruction were absent, and inflammatory changes (infiltration of connective tissue with increase in the number of vessels) existed in a subordinate degree, although the fetus presented

zysts as large and as numerous as those of the specimen in the present case. Török (Török and Noyes, *British Journal of Dermatology*, 1890, ii., 359) inclines toward the opinion of Wegner that the tumors are of neoplastic origin, formed by new lymphatic branches developing from angioblasts, as in the case of angiomas, and dilating to form cysts. In support of this theory he adduces the following facts: First, that lymphangiomas frequently find their origin in the subcutaneous fat tissue, which is naturally poor in lymph vessels; and, secondly, that the rapid growth of these tumors, where their origin cannot be ascribed to obstruction, can only be explained by the growth of new vessels.

In the further study of the etiology of such cases of congenital affection we cannot do better than to refer to the paper of Neelsen, quoted above, in which he adopts a theory entertained by Klebs and Schütz—that is, that the final pathological changes, namely, increase in connective tissue, dilatation of lymph spaces, and hypertrophy of lymphatic walls, are due to a chronic inflammatory edema. In cases of hydremia, or where some chronic blood dyscrasia exists, as in syphilis, the quality of the blood, effecting an alteration in the vessel walls, is the cause of the transudation. In the case reported by Neelsen the mother suffered from nephritis and anasarca during the latter months of pregnancy. The fetus, however, as in my case, showed no hydrothorax or ascites; in both cases the lymphatic system of the subcutaneous tissue was alone affected. Neelsen concludes, with Cohnheim, that the edema occurs only in those tissues where the vessels are in a condition to favor transudation, a condition similar to that existing in the early stage of inflammation—in his case, in the bones and subcutaneous connective tissue.

The earlier children in Neelsen's case suffered from tubercular affections of the bones and joints, and from skin diseases incident to the same cachexia. The mother had also exhibited tubercular tendencies. This fact and the existence of nephritis account for changes in the maternal blood sufficient to produce the edema and the consequent irritation of the skin and subcutaneous tissue with hyperplasia. We have no such history in the case which has been reported, and although we may look to this theory of blood dyscrasia, with

edema and secondary inflammatory changes of the subcutaneous tissue, as the most plausible, the etiology is still obscure. Nor does the absence of irritative or marked degenerative changes in the placenta contribute to lessen this obscurity.

A NEW ABDOMINAL ELECTRODE.

BY

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THOSE who use electricity in gynecological practice will appreciate anything that will satisfactorily replace the nasty clay electrode. The time required to put the clay in order renders it an insurmountable obstacle to those who have not the assistance of a nurse. The patient, too, will approve of something clean and comfortable.

To make the electrode, take a piece of wire strainer cloth of suitable shape and size, and solder three soft-copper wires, No. 14 wire gauge, longitudinally, one each one-half inch from either side, and one in the centre, the latter to have a loop projecting up three-fourths of an inch in the middle. Another wire placed at right angles to these, with a similar loop overlapping and embracing the other, forms a binding post.

These wires, soldered securely at the centre and ends, and tacked to the wire cloth at intervals of half an inch, will bend sufficiently to conform to the shape of the abdomen, while yet rigid enough to maintain the form given.

Cover both sides with a layer of absorbent cotton (the flesh side thicker), and quilt securely. Over the back side secure a piece of rubber cloth projecting two inches over the border in every direction, to preserve the patient's clothing from moisture.

This, with an electric wire connector to fasten the conducting cord with milled-head screws to the binding post, completes a cheap, clean, convenient, and an ever-ready electrode that needs only to be well wetted with warm water to secure a good contact.

It is readily applied under the clothing, if not too tight, thus saving time, and relieving the patient from great annoyance,

being in this respect superior to the other. The size of this should be a little in excess of the clay electrode for a current of similar strength ; though, if thoroughly wet and properly moulded to the abdomen, the apposition is nearly as good. I have used a current of one hundred and fifty milliampères through a seven-by-nine inch pad without undue discomfort.

Two or three sizes will prove convenient, since the smaller will do for lighter work and are more easily applied.

From a year's experience I am satisfied that this will be superior for all ordinary use, though perhaps the clay may be needed for the very heavy currents sometimes required.

REPEATED CESAREAN SECTION, WITH A REPORT OF THREE NEW CASES.

A CONTRIBUTION FROM THE ROYAL HOSPITAL FOR WOMEN, DRESDEN.

BY

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THERE were in the Royal Maternity Hospital in Dresden, during the short space of seven weeks, three cases of Cesarean section, which operations I was fortunate enough to witness. I was also able to follow the patients through the whole puerperium. The cases are especially interesting, as all of them had been previously delivered through the *sectio Cesarea*.

The method of operation was that first described by Professor Säger, and executed and modified by Professor Leopold—strictest antisepsis, abdominal and uterine incision in the median line, prevention of hemorrhage by placing an elastic tube around the cervix, the most careful suturing of the uterus. In Cases I. and II. silver wire was used the first time, and silk the second time, for uterine sutures, while in Case III. silver sutures, chromic catgut, and silk were successively applied.

I make use of Professor Leopold's kind permission to publish these cases, and hope that they will prove interesting and useful to the profession across the Atlantic.

CASE I.—Mrs. A. P., 29 years, entered the clinic March 23d, 1891. Family history is negative. Suffered from

rachitis and learned to walk at the age of 2. First menstruation at 15 years, regular. Had simple anemia at 16 years, acute articular rheumatism when 21 years old.

March 30th, 1886, the first Cesarean section was performed on the woman. The indications were: Rickety pelvis, early rupture of the membranes, prolapse of the funis, and the voiding of meconium. The placenta was found in the line of incision, but was not injured. Uterus closed by seven deep wire and twenty superficial silk sutures. Some atony of the uterus after loosening the rubber tube. Living child; died after four weeks of cholera infantum. Normal recovery; no fever.

When discharged on the twenty-second day, the uterus was the size of a fist, anteverted, fixed in the line of incision. The health after the operation remained good, but she was troubled by pains in the region of the bladder, which were due to the silver sutures pressing and rubbing against its posterior wall. These pains became less as pregnancy advanced, and finally disappeared entirely.

March 25th, 1891. Present condition: Woman 4 feet 3 inches in height. Muscles poorly developed, bones showing traces of rachitis. All organs normal, abdominal walls tense, belly pendulous. Child in vertex presentation. Beginning of tenth month. Last menstruation June 20th, 1890. Sp., 25 cm.; cr., 25 cm.; tr., 31.5 cm.; conj. ext., 17.5 cm.; conj. diag., 8 cm.; conj. vera, 6 cm. She complains of labor pains, which are faint, at long intervals, and again disappear in a few days. On the 29th of April she has strong pains. External examination shows the child in first position, head movable over the pelvic brim. Heart sounds good, 152. A vaginal examination is made at 11 A.M. The os admits one finger, the membranes are not ruptured, head movable. The promontory can easily be touched. To lessen the intensity of the pains morphine hydrochlorate gm. 0.02 is administered. 1:30 P.M.: Condition the same, but the fetal heart sounds are accelerated (164). 3:30 P.M.: Sectio Cesarea by Professor Leopold. Ether narcosis. Before the operation vaginal douche HgCl_2 1:4,000. Tamponade with iodoform gauze. Abdominal and uterine incision to the right of the old cicatrix. The child was deeply asphyxiated, and the operation was interrupted for seven minutes, after which time it

revived. During this time the uterus was kept in hot sublimate towels and the wound closed by clamps. The position of the placenta, which was on the posterior wall, had been diagnosed previously. The uterine cavity was thoroughly cleansed with five-per-cent carbolic acid, and the silver sutures from the first operation were removed with the old scar tissue. Nine deep and fifteen superficial silk sutures were necessary, the deep sutures going through the whole uterine wound, including the decidua. The wound was perfectly closed, and no bleeding followed. Closure of abdomen as usual, antiseptic dressing. Time of operation, fifty minutes.

Except for slight meteorism and vomiting during the first few days, the puerperium was normal. Abdominal wound closed by first intention. Highest temperature, 37.6° C. (99.5° F.) When discharged on the twentieth day, the uterus was the size of a fist and movable. General condition excellent. Child (female) was 49 cm. long and weighed 2,660 gm.; gained 410 gm. during three weeks (3,070 gm.).

CASE II.—Mrs. L., Vpara, æt. 31 years. First menstruated at 20 years; three to seven weeks, very profuse. Since 1886, menses irregular, flow watery, of a reddish brown color. Four previous deliveries: 1882, perforation on the living child after she had been in labor for three days; 1883, normal labor, small living child died two and a half years later; 1884, perforation; 1886, sectio Cesarea. She entered the hospital March 13th, 1886, at 9 P.M. Membranes ruptured, os admits two fingers. Pains weak. Head movable, L. O. A. Heart sounds good (146).

March 14th, 10 A.M. Pains strong, head still movable. Cesarean section, after the usual precautions, by Professor Leopold. Placenta previa Cesarea not injured. Easy extraction of a fully developed, living child. Uterus closed with eight deep silver and twenty superficial silk sutures. Child 49 cm. long and weighed 2,852 gm. Normal recovery. Discharged on the eighteenth day.

May 15th, 1891, the woman again applied for admittance to the hospital. She was then in the ninth month of pregnancy. Muscles poorly developed, bones rachitic. Sp., 24 cm.; cr., 24 cm.; tr., 30 cm.; conj. ext., 17 cm.; conj. diag., 8.75 cm.; conj. vera, 6.75 cm. Linea innominata curved

inward. Sacrum and coccyx depressed and projecting forward. There appear to be adhesions between the uterus and abdominal parieties. L. O. A. position.

June 15th. 2 P.M. : Labor began, and the pains were quite strong by 9 P.M. At that time the membranes were still unruptured, the os admitted one finger, head movable.

11 P.M. : Operation by Professor Leopold. Ether narcosis. Abdominal section to the left of the old incision. The uterus was found strongly adherent to the abdominal wall and the mesentery. The adhesions had to be partly ligated and divided before it was possible to turn the uterus out of the abdominal cavity. When the uterus was opened, a piece of placenta presented itself in the wound, without having been injured. The main part of the placenta was situated on the posterior wall. As in the previous case, its position had been previously diagnosed. I shall dwell later upon Professor Leopold's method of locating the seat of the placenta. The child was slightly asphyxiated, but soon began to cry. The silver wire sutures from the first operation were easily found and removed. Twenty-nine deep and superficial silk sutures united the uterine incision, which closed perfectly. The uterus was well contracted, but there was slight oozing from the separated adhesions. This was stopped by ligating the bleeding points and by the thermo-cautery. A strip of iodoform gauze was placed along the uterine incision and led out of the lower angle of the abdominal wound. This was to act as a drain, on account of the many injuries to the peritoneum.

The puerperium passed without any fever. The iodoform gauze was removed on the second day. The woman left the hospital on the twenty-sixth day after the operation; the uterus was then the size of a goose egg, anteflexed, and adherent to the abdominal wall, but otherwise perfectly movable. Child (female) at birth was 50 cm. long and weighed 3,410 gm.; at discharge was 50 cm. long and weighed 3,820 gm.

CASE III.—Mrs. S., IIIpara, æt. 29 years, entered the clinic February, 1886, with the desire to become the mother of a living child. She had been delivered twice by perforation and extraction; the first time December 1st, 1883, the second time February 12th, 1885. General condition is good; marked rachitic traces.

March 3d, 1886. 2 A.M.: Sudden onset of severe labor pains, and early rupture of the membranes. 9 A.M.: Sectio Cesarea by Professor Leopold. Usual method of operation; duration, one hour and thirteen minutes. Eight deep silver sutures and eighteen superficial silk sutures were used to close the uterus. Child (male) weighed 2,550 gm.; died on the twenty-third day. Normal puerperium.

She again presented herself for operation September 9th, 1887. Labor pains very severe. Child in transverse position. Belly pendulous. The uterine walls appear to be very thin, and rupture of the uterus threatens. The os is fully dilated, membranes not ruptured. 4 P.M.: Sectio Cesarea by First Assistant Dr. Korn, Professor Leopold being absent. Opening of the abdomen and uterus as before. A few adhesions between the uterus and the abdominal wall were easily separated. Placenta previa Cesarea not injured. The detachment of the placenta was quite difficult and required some time. The child cried at once. Four silver sutures from the first operation were removed; the others, being well encysted, were left in situ. This time chromic catgut was used for the seven deep interrupted sutures and a continuous superficial suture. Time of operation, one hour and twenty-five minutes. Child (female) weighed 3,040 gm. Normal recovery. Discharged on the eighteenth day.

The third Cesarean section was performed on Mrs. S. on June 27th, 1891. Her health had been perfect since the last operation, and she went through pregnancy without any unusual discomforts.

Present condition: Pendulous belly. Uterus appears to be adherent to the surrounding parts. Sp., 24 cm.; cr., 25 cm.; tr., 3 cm.; conj. ext., 17.75 cm.; conj. diag., 8.75 cm.; conj. vera, 6.5 to 6.75 cm. The uterus becomes markedly thinned, especially in the cicatrix, as the labor pains get stronger. 3.30 P.M.: Cesarean section by Professor Leopold. Ether narcosis. Os not dilated, membranes intact, general condition excellent. Uterus is bound by adhesions to the omentum and abdominal parieties; anterior position of placenta, previously diagnosed. Rapid extraction of a fully developed, living boy. The removal of the placenta was quite difficult. No trace of the chromic catgut sutures of the second

operation could be found, but the remaining silver wire from the first operation was this time removed, as was also the old scar tissue. The uterine walls were very thin, one part of the cicatrix being transparent, so that a rupture would soon have occurred. Fifteen deep and seventeen superficial silk sutures were inserted; no atony. Drainage with iodoform gauze, as in Case II. The other steps of the operation were as usual. Duration, fifty-eight and a half minutes. Recovery uninterrupted. She had no fever. The iodoform gauze was removed on the third day; it had drained excellently. The woman was able to nurse her child from the beginning. She was discharged on the twentieth day. Child (boy) at birth was 50 cm. long and weighed 3,980 gm.; when discharged was 57 cm. long and weighed 4,270 gm.

These three cases are very instructive and interesting. It is seldom that one sees a Cesarean section, and to witness three in a comparatively short space of time, all ending favorably to mother and child, was indeed good fortune. The value of these cases is greater because of the previous operations, which allowed us to study the influence of pregnancy upon the uterine cicatrix, the fate of the various materials used for uterine sutures, and other points which I shall mention later. I therefore followed with pleasure the suggestion of Professor Leopold to investigate those particulars in which the repeated Cesarean section differs from the primary operation, and the method of meeting or avoiding probable complications. For this purpose I collected all cases of Cesarean section which I could find in the literature at my disposal.

It will be best to divide these cases into three groups, according to the methods of operation:

1. Without antisepsis and without suturing the uterus—old method.

2. With antisepsis and with uterine sutures.

3. Those which were operated after the methods of Professors Sänger and Leopold. This would comprise most cases occurring after 1882, for in that year the first classical Cesarean section was performed by Professor Leopold.

In the following tables I have arranged the cases chronologically.

TABLE OF CASES OF REPEATED CESAREAN SECTION.

Name, Age, Previous labors, Pelvic measurements.	Condition before operation.	Operator, Method of operation, Date of operation.	Results to mother.	Results to child.	Results of post-mortem examination.	Literature.
1 IVpara. Three times perforation and extraction. Conj. vera 6.4 centimetres.	Bones rachitic. General condition is good.	First operation. Baqua, Nantes, 1797. Abdominal and uterine section in median line. Uterus not closed by sutures.	Normal puerperium.	Living child.	.....	Recueil périod. de la Soc. de Méd. de Paris, vol. i., p. 434.
2 L. Mantz, 26 yrs., Ipara. Conj. vera 5 cm.	Rachitic pelvis. Several hours in labor. Child dead. Sixty hours in labor.	Second operation. Baqua, Nantes, 1806. Previous method of operation.	Recovery. The woman died in the year 1833.	Living child.	.....	Comme n t a t i o n e s Soc. reg. Goet t i n g e n , vol. i., O s t a n d e r d. A
3 Ipara. Conj. vera 5.25 cm.	Twelve hours in labor	First operation. Mangold, Bonn, 1797. Old method. Uterus not sutured.	Recovered.....	Dead and putrid.	.....	t i o n e s Soc. reg. Goet t i n g e n , vol. i., O s t a n d e r d. A
	Sixty hours in labor.	Second operation. Balba, Zurich, 1801. Old method.	Recovered after thirteen weeks.	Lived.	Not mentioned.	Archiv f. Gynäcol., vol. xix., p. 417.
	Twelve hours in labor	Third operation. Burkhardt, Basel, 1805. The same method.	Death after twenty-two days.	Lived.....	.....	Archiv f. Gynäcol., vol. xix., p. 417.
	Rachitic dwarf.....	First operation. Schlegel, September 14th, 1801. Old method.	Recovery. She left the hospital December 19th, 1801.	Lived.....	.....	Archiv f. Gynäcol., vol. xix., p. 417.
		Second operation. Schlegel, Merseburg, 1808. Old method.	Died a few hours after the operation.	Lived.....	Atony of the uterus.	Jour. gén. de Méd., vol. xl.
4 Ipara, 25 years. Conj. vera 5 cm.	Rachitic pelvis. The woman is extremely deformed.	First operation. Dariste and Martinique. Old method.	Recovery after four weeks.	Lived.....	.....	Jour. gén. de Méd., vol. xl.
		Second operation. Dariste and Martinique, 1807.	Recovery.....	Lived.	.....	Edinburgh Med. and Surg. Jour., vol. ix., p. 178.
5 Vpara, 50 years. Four times perforation.	.....	First operation. Chauneil, 1813. Old method.	Discharged three weeks post operation.	Lived.....	.....	Edinburgh Med. and Surg. Jour., vol. ix., p. 178.
		Second operation. Chauneil, 1814. Old method.	Recovery.....	Lived.	.....	

6	Viandes, 24 years. Ipara. Conj. vera 5.5 cm.	Rachitic pelvis. In labor twenty hours.	First operation. Merreux, Cologne, 1821. Old method. Second operation. Merreux, 1826. Old method.	Discharged after four weeks. Recovery after six weeks.	Lived.	.....	Gemeinsame Deutsche Zeits. für Geb., vol. viii., p. 321. Neue Zeits. für Geburtskunde, vol. v., 1837.
7	Adametz, 31 yrs. Ipara. Conj. vera 5 cm.	Two days in labor. Version and forceps tried without success. Child dead.	First operation. Zrovulck, Ed- delack, Old method. Second operation. Wildemann, Kiel, January 21st, 1830. Old method. Third operation. Michaelis, March, 1832. Old method. Fourth operation. Michaelis, 1836. Uterus was adherent to the abdominal wall by its whole anterior surface. The peritoneal cavity was not opened.	Recovery..... Recovery..... Discharged after twelve weeks. Recovery.....	Dead and macerated. Lived. Lived. Lived.	.....	.....
8	Tolz, 24 years. Ipara. Conj. vera 5.75 cm.	Traces of rickets.	First operation. Kilian, Bonn, November 28th, 1832. Old method. Abdominal incision from the umbilicus to the middle of Poupart's ligament. Second operation. Kilian, De- cember 21st, 1838. Old method.	Recovery..... Recovery after five weeks.	Lived. Lived.	.....	Ign. Disser- tation. P. von Ghe- men, Bonn.
9	III Ipara. Twice forceps.	Attempt at version. The head was torn off and remained in the uterus. Several hours in labor. Neglected trans- verse presentation; prolapse of one arm. Child dead.	First operation. Bowen, Lon- don, 1833. Removal of the fetal head through the sectio Cesarea by the old method. Second operation. Bowen, Lon- don, 1835. Old method.	Recovery..... Recovery.....	Dead and mutilated. Dead and macerated.	.....	London. Med. and Gyn. Jour., 1844.

No.	Name. Age. Previous labors. Pelvic measurements.	Condition before operation.	Operator. Method of operation. Date of operation.	Results to mother.	Results to child.	Results of post-mortem examination.	Literature.
10	para 32 years. Conjug. vera 9 cm. Transversely contracted pelvis of extreme degree.	Dwarf. Limbs markedly rachitic.	First operation. Rouvier, Laugny, 1837. Old method. Second operation. Rouvier, Laugny, 1839. Old method.	Recovery..... Recovery.....	Lived..... Lived.	.....	Bulletin de l'Académie royale de Méd. de Paris, 1837-39.
11	.....	.....	Bosch and Wynands made a statement before Belgic Medical Congress, 1835, to the fact that they had delivered a woman twice through Cesarean section. Recovery both times. Children lived.	Recovery.....	Two living children.	.....	Bulletin Med. Belge, January, 1839.
12	Mrs. Reybold, Philadelphia, 26 yrs. Twice perforation performed.	Rachitic deformity of pelvis.	First operation. Gibson, Philadelphia, March 25th, 1835. Old method. Uterus not sutured. Second operation. Gibson, Philadelphia, November 5th, 1837. Old method.	Recovery..... Recovery. She died August 5th, 1885, age 76 years.	Living in 1888. Has borne eight children. Died October 4th, 1881, age 43, leaving two daughters and one grandchild.	Post-mortem forty-four years after the last operation. No trace of uterine cicatrix or thinning. Fundus elongated by tension to nearly 12 cm. The adhesions between uterus and abdomen had been reduced to 2 inches.	THE AMER. JOUR. OBS., vol. xxiii.

13	Charoubel, VII. para. Three normal labors; fourth and fifth, perforation; sixth, version.	Had osteomalacia of pelvis, extreme degree.	First operation. September 19th, 1837. Old method. Second operation. August 10th, 1843. Old method.	Kilian, Bonn.	Recovered after eight weeks.	Lived.	.....	"Dreizehentlich Kaiser-schnitte," Kilian, Bonn.
14		An enormous osseous pelvic tumor excluded the possibility to deliver <i>per vias naturales</i> . Pendulous belly. General condition poor. Suffered during the last months of pregnancy from severe dyspnea, which she could only alleviate by lying in the knee-elbow position.	First operation. Meistenhauser, 1840. Old method. Second operation. Meistenhauser, 1844. Old method.	Meistenhauser, Bonn.	Recovery.....	Living.	.....	Oestreich, med. Wochenschr., 1841-45.
15	Adele Fenninger, III para. Conj. ext. 14 cm. Previous labors (?)	Severe pains and vomiting. Waters drained away. On each side of the abdominal incision is a serous cyst about the size of a fist.	First operation. Bach, Strassburg, October 26th, 1845. Old method. The abdominal cavity contained considerable serum. The placenta, situated anteriorly, was cut into. Uterus not sutured. A seton is placed into the uterine cavity and led out of the lower angle of the abdominal wound. Second operation. Stoltz, Strassburg, June 27th, 1847. Old method. Duration of operation, seven minutes.	Bach, Strassburg, Bonn.	Recovery after thirty-five days. In the first few days high pulse and fever. In the lower portion of the wound an oval opening formed, at the bottom of which the uterus could be seen.	Living (female).	.....	Monatschrift f. Geb., vol. vi., p. 182.
16	Werth, VII para. Six normal con- finements. Osteomalacic pelvis.	Dwarf. Rachitic traces. Suffers from osteomalacia. General condition very poor. Pelvic deformity much increased, due to the osteomalacia.	First operation. Winckel, January 26th, 1849. Old method. Chloroform. Second operation. Winckel, October 3d, 1851. Old method. A number of small varicose tumors are found in the uterine cicatrix.	Winckel, Jann.	Recovery.....	Living.	.....	Monatschrift f. Geb., vol. xxii., p. 54.

Name, Age, Previous labors, Pelvic measurements.	Condition before operation.	Operator. Method of operation. Date of operation.	Results to mother.	Results to child.	Results of post-mortem examination.	Literature.
17 Louise Fischer, 23 years, Ipara. Conjugata 5 cm. Obliquely contracted pelvis.	Rachitic traces. Os fully dilated. Labor pains about eight hours. General condition good.	First operation. Oetler, Greitz, February 12th, 1853. Old method. Ether narcosis. Second operation. Oetler, Greitz, November 18th, 1857. Old method. Uterine cicatrix not thinned, smooth, and glis- tening. Third operation. Oetler, December 27th, 1859. Old method. Moderate hemorrhage after the detachment of the placenta. Fourth operation. Oetler, May 9th, 1863. Old method. Duration of operation, thirty minutes.	Normal puerperium. Discharged after three weeks. Recovery.....	Living..... Living (female).	.....	Monatschrift f. Geb., vol. xxxiv., p. 441.
18 E. H., 19 years, Ipara.	Two weeks in labor. Two days in labor. Uterine walls very thin.	First operation. Tiesche, August 9th, 1859. Old method Chloroform. Second operation. Kaiser, November 21st, 1860. Old method. Chloroform. Atony of the uterus. Severe hemorrhage.	Recovery. Had chills in the first two weeks. Superficial necrosis of the abdominal wound. Recovery. On the twentieth day severe vomiting. Soon after the operation prolapse of a coil of intestines. The woman did not conceive again. She was well August, 1869. Recovery. Return of menstruation after four months. Death two days after the operation. Had rigors and fever.	Dead and putrid. Living (male).	 Septic peritonitis could not be demonstrated. Adhesions between uterus and	Monatschrift f. Geb., vol. xxv., p. 78.

19) Para, 24 years. Conj. vera 5 cm. Extreme de- formity of the pelvis.	Three days in labor. Water had drained off two days before. Unconscious. No pains. Skin dry and hot; thready pulse, 142. Severe labor pains. Threatening rup- ture of the uterus.	First operation. Merinar, Charleston, July 17th, 1852. Old method.	Recovery. Discharged September 20th, 1852.	Dead and macerated.	.....	Charles Stoll Med. Jour. and News, 1856.
		Second operation. Merinar, May 22d, 1854. Old method. Slight hemorrhage after the detach- ment of the placenta. Third operation. Merinar, Oc- tober, 1855. Old method.	Recovery. Severe fe- ver on the fourth day. Discharged August 28th, 1854. Died. Result favor- able up to the fifth day, then sudden exitus letalis.	Living (male). Living.	.....	
20) Hammer, Ipara..	Osteomalacia.....	First operation. Pagenstecher, July, 1852. Old method. Second operation. Pagenstecher, March 28th, 1858. Old meth- od. Abdominal incision through the centre of the her- nia. Uterine walls are thin as paper and transparent; they are not so thick as the bulging membranes. Severe hemor- rhage in spite of the strong uterine contractions.	Recovery.. ..	.....	.....	Monatschrift f. Geb., vols. iv. and xii.
	Had during the last pregnancy several attacks of osteoma- lacia. Marasmus. Enormous ventral hernia, reaching down to the knees. Abdominal walls very thin and on different parts ne- crotic. The woman could neither walk nor stand up. Pel- vic bones painful and thin. Labor pains have disap- peared. Fetal heart sounds can no lon- ger be heard.		Died eighty hours post operationem. Hemorrhage con- tinuous. Severe vo- miting. Abdomen enormously dis- tended.	Dead and pu- trid.		

Name, Age, Previous labors, Pelvic measurements	Condition before operation.	Operator, Method of operation, Date of operation.	Results to mother.	Results to child.	Results of post-mortem examination.	Literature.
21 Hera, 25 years. Conj. vera 4 cm.	Rachitic deformity.	First operation. Clausen, Lithol, 1865. Abdominal and uterine section in the middle line. No uterine sutures. Second operation. Litzmann, Kiel, 1873. It is not stated whether the uterus was sutured.	Recovery..... Recovery. Life was threatened for a long time by a peritoneal abscess. Improvement followed its perforation and discharge through the vagina.	Lived only ten minutes Living.	.....	Archiv Gyn., vol. xviii., p. 293
	Very anemic, poorly nourished. Diastasis of the recti muscles. The interspace is filled with transverse running bands of scar tissue two weeks before term.	Third operation. Litzmann, April 7th, 1881. Porro's operation before the onset of pains. Abdominal incision in the old cicatrix. The transverse bands belong to the omentum. A coil of small intestines is adherent to the abdominal wall. The other steps of the operation were as usual.	Recovery after five weeks. Dyspnea and vomiting during the first few days.	Living. Was deeply asphyxiated, but revived after twenty minutes.		
22 Hera, 23 years. Sp. ant., 20 cm.; cr., 19 cm.; conj. ext., 14 cm.; conj. diag., 7 cm.	As child had coxitis caries of rib, femur, and spine. Marked scoliosis. Height 129 cm. General condition good. Pains during twelve hours. Membranes not ruptured, os dilated. Uterus anteverted.	First operation. Birnbaum. Abdominal and uterine section in the median line. Delivery of the head very difficult, forceps were used. Considerable hemorrhage. Uterus not sutured.	Recovery. During the first few days sloughing of the abdominal wound and fever. Union on the tenth day.	Living (boy). 2,550 gm.	.....	Archiv Gyn., vol. xxviii., p. 248. (Case 5.)

22	continued.				Peritoneal cavity free from blood or other secretions. The catgut sutures have opened. Obliquely contracted pelvis. The left side of the sacrum is absent (Nägels pelvis).	Archiv f. Gyn., vol. xxvii. Freudenberg.
23	Impara, 30 years. Conj. diag. 8 cm. Pendulous belly. Broad, thinned scar. General condition very unfavorable. Emaciated and enfeebled. Continuous vomiting. Uterus very sensitive. In labor six hours. Membranes not ruptured.	Had rickets during childhood. General health good. General condition fair. Abdominal cicatrix bulges out. Uterine walls very thin. Beginning of labor.	First operation. 1876. Lister's antiseptics. Chloroform. Median incision. Catgut sutures. Second operation. 1878. Listerism. Chloroform. Median incision. No adhesions. Placenta previa Cesarean cut into, followed by an enormous hemorrhage. Five catgut sutures.	First operation. Birnbaum, 1876. Lister's antiseptics. Chloroform. Median incision. Catgut sutures. Second operation. Birnbaum, 1878. Listerism. Chloroform. Median incision. No adhesions. Placenta previa Cesarean cut into, followed by an enormous hemorrhage. Five catgut sutures.	Recovery.... Living.... Recovery. Highest temperature 38.5° C., second day. Recovery.... Living (female).	Archiv f. Gyn., vol. xxvii. Freudenberg.
24	IV para, 34 years. Three miscarriages, in the sixth, third, and fourth months. Rickety pelvis.	General condition good. Membranes not ruptured. Labor pains. Same as at previous operation.	First operation. Lungen, Toledo, O., 1876. Antiseptic precautions. Placenta anteriorly. Five silver-wire sutures. Second operation. Lungen, 1881. Antiseptics. Median incision, no adhesions. Silver wire from the first operation encysted. Twelve horseshair sutures; three of these loosen and silver wires take their place. Drainage.	Recovery.... Living (female). Recovery.... Living.	THE AMER. JOUR. OBS., January, 1881.	

Name	Age.	Previous labors.	Pelvic measurements.	Condition before operation.	Operator	Method of operation.	Date of operation	Results to mother.	Results to child.	Results of post-mortem examination.	Literature.
Ritger, Ipara.	25			Height, 133 Cm. Rachitic.	First operation. Vorderbank.	Schlemmer and		Recovery.....			Archiv f. Gyn., vol. xxv., p. 423.
				Moderate pains. Membranes ruptured. Uterus very thin. Abdominal cicatrix pressed asunder by the bulging uterus.	Second operation. February 16th, 1878. Antiseptis. Median incision. In the lower portion of the uterine cicatrix is a subperitoneal hemorrhage, forming a cyst-like projection, indicating threatening rupture of the uterus. Atony of the uterus. Four catgut sutures.	Birnbaum.		Recovery.....	Living (female).		
				She was attacked with labor pains while on her journey to the Maternity Hospital in Cologne.	Third operation. Coulong, Malmedy, 1879.	Coulong, Malmedy.		Recovery.....	Living.		
				Beginning of labor, os fully dilated. Prolapse of the cord, which is protected from pressure.	Fourth operation. November 9th, 1881. Antiseptis. Median incision. Adhesions. Again the blood cyst seen in the second operation. Placenta anteriorly, which had to be detached before it was possible to deliver the child.	Birnbaum.		Recovery. Normal puerperium. Highest temperature 37.8° C.	Living (boy). 3,000 gm.		
				Child in breech presentation. Second stage of labor.	Fifth operation. March 31st, 1884. Median incision. This time also the blood cyst, as seen in the second	Birnbaum.		Died. For four days the woman was comparatively comfortable, then she	Lived (boy). 3,500 gm.	The peritoneal cavity was free from blood	

25	continued.		ond and fourth operations. Ten deep and five superficial catgut sutures.	became suddenly pulseless, cold, and cyanotic. Features sunken. She died twelve hours later.	or other sections. Uterine wound gapes. Spleen softened. Thrombosis of the pulmonary arteries.
26	Vpara, 45 years. Three normal labors. Fourth labor forceps operation.	The woman had osteomalacia after her third confinement. Pendulous belly. Uterus thin. Second stage of labor.	First operation. Second operation. Veit, January 28th, 1877. Median incision. Placenta anteriorly cut into; the umbilical cord was also divided. Catgut sutures. Great difficulty in bringing the uterine flaps together; the strong uterine contractions always separated them again and the sutures loosened.	Recovery. Died six days after the operation. 29th, patient very comfortable, temperature 37.9°, pulse 104. 31st, vomiting, temperature 38.6°, pulse 130. Three sutures are taken out of the abdominal wound. A considerable quantity of a brown ill-smelling fluid is discharged. Flushing of the abdominal cavity with a hot solution of carbolic acid, 3 per cent. February 2d, the rest of the stitches are re-	Zeitsch. für Geb. und Gyn., vol. v, p. 257. General purulent peritonitis. Omentum and colon transversum adherent to the abdominal wall. The uterine incision runs transversely across the fundus; edges widely gaping. The sutures either loose or entirely opened.

Name, Age, Previous labors, Pelvic measurements.	Condition before operation.	Operator, Method of operation, Date of operation.	Results to mother.	Results to child.	Results of post-mortem examination	Literature.
27 X para, 37 years. Eight normal labors. Ninth, forceps operation. Osteoma of the pelvis.	Suffered from osteomalacia since the eighth confinement. Beginning of labor. Caput succedaneum. Prolapse of nearly the pulseless cord. General condition fair.	First operation. Birnbaum, 1882. Median incision. Antisepsis. Uterine sutures. Second operation. Birnbaum, 1884. Previous method. A coil of intestines is adherent to the abdominal wall and nearly cut into. The placenta was divided in making the uterine incision; this was followed by an enormous hemorrhage. Nine catgut sutures.	Recovery. Died the sixth day. Severe vomiting, moderate fever. Symptoms of septic peritonitis.	Lived Lived (female); was deeply asphyxiated, but revived. 2,750 gm.	 General purulent peritonitis. The sutures have cut through and the edges of the wound gape widely	Archiv Gyn., vol. xxviii. Nederlandsche Tijdschrift voor Verloskunde en Gyn., vol. i.
28 IV para, 28 years. First confinement without instruments; second, forceps—both dead; third	Contracted rachitic pelvis. Operation before the onset of labor pains.	First operation. Van der Meij, Amsterdam, February 11th, 1896. Säger-Leopold method. Relative indications. Placenta previa. Cesarean cut into. Uterus sutured with silk.	Recovery. Local peritonitis during the first weeks. Discharged after three weeks.	Lived . . . . .	.....	

28	time neglected transverse pre- sentation, deca- pitation. Sp., 26 cm.; cr., 26.5 cm.; conj. ext., 15 cm.; conj. diag., 8 cm.; conj. vera, 6.2 to 6.5 cm.	Status is the same as before the first op- eration.	Second operation. Von der Meij, September 25th, 1888. Sün- ger-Leopold method. Relative indications. Uterus adherent. No trace of a uterine cicatrix, nor can the silk ligatures from the first operation be found. Uterus did not contract after the delivery of child and pla- centa. Massage. Tamponing of the cavity with iodoform gauze induces finally good contraction. Silk sutures.	Recovery. Intense meteorismus on the second day, relieved by puncturing the gut.	Lived.....	Archiv f. Gyn., vol. xxxiv, 134.
29	Barth, 32 years. Ipara. Sp., 25 cm.; cr., 26 cm.; conj. ext., 17 cm.; conj. vera, 6 cm.	Height 135 cm. Ra- chitis during child- hood. Nutrition fair. Rickety pelvis. Symphysis pubis very prominent. Since the 20th of May marked edematous swelling of the la- bia and lower ex- tremities. Urine contains albumin. Nutrition fair. The external examina- tion of the woman leads to suspect twin gestation. Be- ginning of labor; increasing fre- quency of fetal heart sounds.	First operation. Schultze, Jena, January 25th, 1886. Sün- ger-Leopold method. Relative indications. Five deep silver sutures and five superficial silk sutures. Second operation. Schultze, July 23d, 1888. Sün- ger-Leopold method. Relative indi- cations. Abdominal incision in the old cicatrix. Uterus adherent with the abdominal wall. The transverse colon is adherent just above the upper angle of the wound. After opening the uterus two mem- branes present themselves. After their rupture two deeply asphyxiated children are ex- tracted. They have one pla- centa in common. Silver wires from the first operation re- moved. Seven deep and fif- teen superficial silk sutures. The uterus does not contract well. Considerable hemor- rhage.	Recovery. Meteoris- mus, relieved by puncturing the in- testines.	Lived.....	Archiv f. Gyn., vol. xxxiv, 134.
			Recovery in eighteen days. Moderate bronchitis up to the eighth day. Ex- treme meteorism, difficult breathing. Respiration 54. Puncture of the in- testines is followed by temporary im- provement. After two days again meteorism, respi- ration 54, pulse 112, temperature 37°, relieved permanent- ly by puncture. Edema and albu- min disappear af- ter the fifth day.	Two chil- dren, lived; were deeply asphyxiat- ed. Heart beats ten per minute. Re- vived in fif- teen mi- nutes thorough Schultze's method of artificial re- spiration.		

Name. Age. Previous labors. Pelvic measurements	Condition before operation.	Operator. Method of operation. Date of operation.	Results to mother.	Results to child.	Results of post-mortem examination.	Literature.
30 Mrs. S., 29 years, III para. First, perforation; second, perforation. Sp., 24 cm.; cr., 25 cm.; tr., 31 cm.; conj. ext., 17.75 cm.; conj. diag., 8.75 cm.; conj. vera, 6.5 to 6.75 cm. Contracted rachitic pelvis. Besides previous labors, aborted September 25th, 1886, third month.	General condition good. Eight hours in labor. Os dilated.	First operation. Leopold, March 3d, 1886. Sanger-Leopold method. Relative indications. Eight deep silver sutures, eighteen superficial silk sutures.	Recovery. Normal puerperium.	Lived (boy). Length, 47.5 cm.; weight, 2,550 gm.	.....	Jour. der Dresdener Klinik, and "Der Kaiserschnitt," by Prof. G. Leopold.
	Belly pendulous. Os 5 cm. wide. Membranes not ruptured. Labor pains very severe. Child in transverse presentation.	Second operation. Korn, at the Clinic, September 9th, 1887. Sanger-Leopold method. Relative indications. Moderate adhesions. Placenta anterior, removal of which is difficult. Four silver sutures from the first operation are removed. Seven deep chromic catgut sutures. Continuous superficial suture of thin chromic gut.	Recovery. Normal puerperium.	Lived (girl). Length, 47.5 cm.; weight, 3,040 gm.		
	Belly pendulous. During the intense pains the uterus appears quite thin, especially in the cicatrix.	Third operation. Leopold, June 27th, 1891. Sanger-Leopold method. Relative indications. Uterus adherent, very thin. Placenta anterior; detachment very difficult. Removal of the remaining four silver sutures. No trace of the catgut sutures. Fifteen deep, seventeen superficial silk sutures. Iodoform gauze drainage.	Recovery. No fever.	Lived (boy). Length, 50 cm.; weight, 3,980 gm.		
31 Mrs. L., 28 years, IV para. First, perforation; second, normal labor, living child; third, per-	General condition good. Second stage of labor.	First operation. Leopold, March 14th, 1886. Method, Sanger-Leopold. Relative indications. Placenta previa Cesarea. Eight deep silver sutures. Twenty superficial silk sutures.	Recovery. Normal puerperium.	Lived (girl). Length, 49 cm.; weight, 2,852 gm.	.....	Jour. der Dresdener Klinik.

31	foration. Rickety pelvis. Sp., 23.5 cm.; cr., 22.75 cm.; tr., 30.33 cm.; conj. ext., 16.5 cm.; conj. diag., 8.75 cm.; conj. vera, 6.75 cm.	First stage of labor. Uterus appears to be adherent.	Second operation. Leopold, June 15th, 1891. Säger-Leopold method. Relative indications. Many and strong adhesions between uterus and abdominal walls. Placenta posterior. Removal of eight silver sutures and resection of the old scar tissue. Twenty-seven deep and superficial silk sutures. Extirpation of a parovarian cyst of the right side. Iodoform gauze drainage.	Normal puerperium.	Lived (girl). Length, 50 cm.; weight, 3,410 gm.	 Jour. der Dresdener Klinik.
32	Mrs. P., 24 years, Ipara. Rickety pelvis. Sp., 24 cm.; cr., 25.5 cm.; tr., 31 cm.; conj. ext., 16 cm.; conj. diag., 8 cm.; conj. vera, 6 cm.	General condition good. Os 2 cm., dilated. Membranes ruptured.	First operation. Korn, Dresdener Klinik, May 30th, 1886. Säger-Leopold method. Relative indications. Seven deep silver-wire sutures. Twenty superficial silk sutures.	Normal puerperium.	Lived (girl). Length, 48 cm.; weight, 2,660 gm.	 Jour. der Dresdener Klinik.
33	Mrs. St., 36 yrs., Ipara. First, transverse presentation, version, dead child (27.50); second, normal labor, child dies one	Twenty-one hours in labor. General condition good.	Second operation. Leopold, April 29th, 1891. Säger-Leopold method. Relative indications. Uterus not adherent. Silver wires from the first operation encysted and removed. Nine deep and fifteen superficial silk sutures.	Normal puerperium.	Lived (girl). Length, 49 cm.; weight, 2,660 gm.	 Jour. der Dresdener Klinik.
33	Mrs. St., 36 yrs., Ipara. First, transverse presentation, version, dead child (27.50); second, normal labor, child dies one	Twenty-one hours in labor. General condition good.	First operation. Korn, Dresdener Klinik, January 11th, 1886. Säger-Leopold method. Relative indications. Seven deep chromic catgut sutures Continuous suture of chronic gut.	Recovery. No fever.	Lived. Weight, 3,180 gm.	 Jour. der Dresdener Klinik.

continued.

No.	Name, Age, Previous labors, Pelvic measurements.	Condition before operation.	Operator, Method of operation, Date of operation.	Results to mother.	Results to child	Results of post-mortem examination.	Literature.
33	day post partum. Sp., 23.5 cm.; cr., 24.5 cm.; tr., 30 cm.; conj. ext., 16.75 cm.; conj. diag., 9 cm.; conj. vera, 7 cm. Rachitic pelvis.		Second operation. June 26th, 1888. S.-L. method. Relative indications. Uterine cicatrix perfectly smooth. Deep and superficial silk sutures.	Recovery. No fever.	Lived	.....	Letter of Dr. Korn to Prof. Leopold.
34	Pauline S., 30 years, VII para 1876 and 1878, perforations; 1881, premature labor induced (twins dead); 1883, natural labor, died after six months; 1884 and 1885, perforations. Sp., 21 cm.; cr., 26.5 cm.; tr., 30 cm.; conj. ext., 18 cm.; conj. diag., 9.5 cm.; conj. vera, 7.5 cm.	Generally contracted, flattened pelvis; good labor pains	Third operation. Korn, September 22d, 1890. Säger Leopold. Relative indications. Silk sutures.	Recovery. During first two days fever disappeared after a vaginal douche.	Lived	.....	Letter of Dr. Korn to Prof. Leopold.
			First operation. Zweifel, June 22d, 1877. Säger-Leopold method. Relative indications. Placenta, anteriorly situated, was cut into, followed by severe hemorrhage. Chronic catgut sutures.	Recovery. Considerable post-partum hemorrhage. No fever.	Lived (girl). Length, 50 cm.; weight, 3,050 gm.	.....	Archiv f. Gyn., vols. xxx. and xxxvii.
			Second operation. Zweifel, December 17th, 1888. S.-L. meth. Relat. indic. Uterus adherent to omentum and abdominal wall. In making abdominal incision, coil of intestines adherent to it was injured by knife, but not opened. Incision through the uterus was through fundus only. Seven deep silk sutures. Continuous catgut suture.	Recovery. Great meteorism during the first two days; for this high enemata of tepid water. On tenth day gangrene in the middle and lower portions of the wound, accompanied by moderate fever.	Lived (boy). Length, 50 cm.; weight, 2,900 gm. Deeply asphyxiated; revived through Schultze's method in nine minutes.	.....	Annales de Gyn. et Obst., 372.
35	Adèle C., Ipara. Height 1.28 m. Marked rachitic traces. Prolapse of cord, not pulsating. 4.8 cm.		First operation. Crémill. October, 1888. Säger-Leopold method. Absolute indications. Uterine atony. Iodoformed tampons arrest hemorrhage. Ten deep, twelve superficial silk sutures.	Recovery. No fever.	Dead and macerated.	.....	Annales de Gyn. et Obst., 372.

36 Mrs. I., 26 years. Vpara, four mis- carriages. Sp., 19 cm.; cr., 25 cm.; tr., 29 cm.; conj. diag., 15 cm.; conj. vera, 5.5 cm.	Beginning of labor. General condition good.	Height, 1.30 m.; in profound shock; thready pulse. 142. Two weeks in labor. For five days she had only a midwife, then a physician who did nothing but watch her for nine days more. Pains had become feeble and irregular. Es- cape of waters three days before. Child feebly alive. The whole pelvis was filled with masses of exudation. Cervix fixed.	Second operation. Cremona, Feb- ruary 19th, 1891. Sün- ger-Leopold method. Absolute indications. Sterility was in- duced by tying the Fallopian tubes with silk. First operation. Kelly, Phila- delphia, April 17th, 1888. Sün-ger-Leopold method. Ab- solute indications. Placenta previa. Cesarean not injured. Delivery of the after-coming head very difficult; it was situ- ated in the lower uterine seg- ment and held by the con- tracting corpus. Twelve deep and twelve superficial silk su- tures.	Recovery. Normal puerperium.	Lived (fe- male); died after one week.	.....	THE AMER. JOUR. OBS., 1890-91.
Utero-abdominal fis- tula, discharging liquor amnii and di- lating during pains. Os not dilated. Soft parts infiltrated, making delivery <i>per vias naturales</i> impossible.	Second operation. Noble, Phila- delphia, April 27th, 1890. S.-J. meth. Abs. indic. Med. incis. beginning at fistula. Ute- rus adherent to abdom. walls. Severe hemorrhage, no elastic tube being used, an assistant compressing the cervix. Scar tissue resected. Fifteen deep and seven superficial silk su- tures.	Recovery. Normal puerperium; union <i>per primam inten- tionem</i> . The fis- tula did not recur.	Lived; died after a few hours.				

The whole number of cases collected is thirty-six, divided as follows :

28	with	2	operations.....	56
5	"	3	"	15
2	"	4	"	8
1	"	5	"	5
36	.....			84

Of these thirty-six cases ten ended fatally—a mortality of twenty-seven and two-thirds per cent ; but should we distribute the ten deaths over the eighty-four operations, then we would have a lethal termination of only eleven and four-fifths per cent. When we consider that the majority of these cases were operated upon without any antisepsis and uterine sutures, and that the condition of the patients prior to operation was often extremely unfavorable, the results are simply astonishing. A mortality of eleven and four-fifths per cent is to-day an excellent result when obtained after any procedure which necessitates the opening of the abdominal cavity, and but few surgeons who have performed a large number of operations can claim eighty-nine per cent recovery.

If we distribute these thirty-six cases in the three classes previously mentioned, then we will have the following results :

49	operations	without	uterine	sutures,	with	6	deaths	=	14 $\frac{2}{3}$	per	cent.
15	"	with	"	"	"	4	"	=	26 $\frac{2}{3}$	"	"
20	"	after	Sänger-Leopold,	with	no	deaths.					

It is necessary to add here that the fifteen cases date from a time in which the practice of antisepsis was yet in its infancy. The suturing of the uterus was also extremely incomplete. Thus we meet in post-mortem examinations the statement : "The sutures are either loose or have entirely opened." Säger says very correctly : "Cases in which only a few sutures have been applied should not be classed amongst the operations with uterine sutures. It is necessary that the uterus be closed, like every other incised wound, by means of a number of deep and superficial sutures."¹ I cannot assign any reason why the mortality in the cases without sutures should be lower than in those with sutures. If we except

¹ Säger, "Der Kaiserschnitt," p. 105.

Case 22, then we have about equal conditions prior to operation.

The results in those cases operated upon after the Sanger-Leopold method were extremely favorable—twenty operations distributed amongst nine women, all terminating in recovery. Such excellent results can hardly be expected in private practice, where the conditions are vastly different from those which exist in a well-appointed hospital, which has a convenient operating room and the command over good assistance. It also makes considerable difference whether we have the patient for some time under observation and can place her in the most favorable condition for operation, or whether she is brought under our care after various operations have been tried in vain and many vaginal examinations have been made under doubtful antiseptic precautions. These are the main reasons why Leopold cautions against the performance of Cesarean section, under the relative indication, outside the hospitals, advising that, as a rule, craniotomy should take its place. These words deserve especial attention, because there is no operator to-day who obtains such favorable results as Leopold. It must be the duty of every physician to determine at its beginning that a labor can be terminated only by Cesarean section or craniotomy, and place the woman under the care of an experienced operator. Then only can we hope that the destruction of the living child will become an operation of the past.

It is a well-known fact that the first and second pregnancies may be terminated without instrumental aid, while later operative interference becomes a necessity. The reason for this is that the first children are generally small and not fully developed. Thus in these thirty-six cases we have sixty-one confinements prior to the first *sectio Cesarea*:

Fully developed children, normal labor.....	24
Premature labor and miscarriages.....	9
Forceps.....	5
Version and extraction.....	2
Perforation and decapitation.....	19
Unknown.....	2
	61

This would be an average of nearly two for each case.

How many of the children were born alive I am unable to state.

In considering the status before the second operation, and the complications which are met with, we will first discuss the condition of the abdominal cicatrix. We find here the changes common to every laparotomy.

Statements about existing hernia abdominalis are made in Cases 20 and 34. In the former there was a general atrophy of the muscles due to osteomalacia. The hernia reached to the knees, and its walls were thin as paper and necrotic, an effect of the enormous tension to which they were subjected.

Diastasis of the recti muscles has been more frequently observed—Cases 21, 22, 23, 25. The main cause for this is the incomplete closure of the abdominal wound; in Case 23 only six catgut sutures were used. The most careful application of abdominal sutures, long rest in the recumbent position, and the continuous wearing of an abdominal binder, should meet this evil successfully. Leopold uses silk exclusively for sewing up the abdominal incision, which he accomplishes in the following manner: A row of interrupted deep sutures, including the peritoneum, muscles, and skin, is inserted, and then any portions that still gape are closed by superficial interrupted sutures. The results gained by this method are excellent.

A second point in which the repeated Cesarean section differs from the primary operation is in the frequency of adhesions between the uterus and the surrounding parts, especially the abdominal walls. Because of these adhesions the repeated Cesarean section becomes a much more formidable operation. The separation of the adhesions often requires considerable time, lengthening the duration of the operation and thus increasing the dangers to mother and child. The necessary loss of blood is also of consequence to the mother. Other bad results due to these bands of adhesion have not as yet been observed, but it can easily be understood that the formation of adhesions with the intestines might give rise to intestinal obstruction. It is also possible that post-partum hemorrhage may be caused by interference with the uterine contraction. The adhesions had no unfavorable influence upon gestation in Cases 7, 21, 25, 27, 28, 29, 30, 31, 34, 36.

In future the endeavor of all operators must be to prevent the forming of adhesions between the uterus and the abdominal wound. So far all the methods have been unsuccessful. It has been urged that incision in the fundus only would prevent adhesions. This may theoretically seem correct; practically it is useless. Döderlein advocated the application of iodoform-collodion over the uterine wound, also with negative results, and the same failures have followed the various materials employed for the closure of the uterus, for we find adhesions just as frequently after the use of silver wire or silk as after chromic catgut or silkworm gut. Until we know of something better, it must be our aim to suture the uterus as carefully as possible, and avoid adhesions by its rapid union.

According to Krukenberg,¹ the frequency of rupture of the uterus, after Cesarean section without uterine suture, amounts to fifty per cent. If this is true, then it is surprising that in the forty-nine cases collected here not one such accident has happened. In Case 25 a partial rupture of the uterus is mentioned, but it is doubtful whether such has existed. The blood cyst which was three times found might be due to a subperitoneal hemorrhage, and not to a partial rupture of the uterus; if the latter had been the case, there should also have been a hemorrhage into the cavum uteri, which was not found. Considerable danger of rupture of the uterus existed in Cases 20 and 30.

The great pains which are now taken in the sewing-up of the uterus will avert this danger more and more. The best material is undoubtedly silk, for it can be made absolutely sterile and is absorbed in the course of time; this is proved in Case 28, where at the second operation neither uterine cicatrix nor trace of the silk sutures could be found. We should never fail to resect the old scar tissue, which forms the weakest point in the uterine wall.

Atony of the uterus was observed four times, in Cases 18, 19, 28, 35. In Case 23 the operation was performed before the onset of labor; this is dangerous practice, for the presence of uterine contractions is the best prophylaxis. But it cannot be denied that it is more convenient to the surgeon to set his own time and have everything prepared. Massage

¹ Archiv f. Gyn., vol. xxviii., p. 445.

of the uterus, placing of ice in the uterine cavity, and tamponing with iodoform gauze have been successfully employed.

The abdominal and uterine section does not differ from the primary operation ; some make the incision through the old cicatrix, while others cut on its side. The opening of the uterus should always be in the median line. In Case 26 the incision was placed transversely across the fundus, and it was impossible to bring the flaps of the wound together. At the post-mortem, five days later, the wound was found gaping and the sutures had either opened or were loose.

Great care should be exercised not to injure the placenta if it should be situated anteriorly. Leopold says: "I warn against the practice of cutting through the placenta or of boring through it with the finger. It results in considerable loss of blood, and endangers the life of the child. It is better to insert the hand between the uterine walls and the placenta, push the latter aside, rupture the membrane, and grasp the child by the nearest limb."¹

Leopold's method of diagnosing the position of the placenta deserves attention. He states that "when the major portion of the uterus is anterior to the insertions of the tubes, which in most cases can easily be felt, the placenta is anterior, and vice versa."² We were repeatedly able to verify this fact in the various Cesarean sections and after the induction of premature labor. In the latter cases the seat of the placenta was always ascertained, so that it might be avoided by the bougie.

In the patients who were operated upon under the old method there were absolute indications in forty-one operations, and relative in eight ; these last eight all resulted favorably for the mother and six children were born alive ; two were dead before operation (case of Bowen). I class this last case amongst those of relative indication, because the woman was twice delivered with forceps, which would not be possible if the conjugata vera was less than six centimetres.

In the second class of cases there was absolute indication eleven times. The remaining four cases, operated by Birnbaum, could have been delivered by perforation or version.

There remain yet twenty cases, operated upon after the

¹ Leopold, "Der Kaiserschnitt," pp. 169-170.

² Ibid., p. 27.

Sänger-Leopold method, in which the absolute indication was present in only four, if we consider six centimetres the limit of perforation. Crémil said, in the description of the first operation, that the sectio Cesarea was only performed because he had neither cranioclast nor cephalotribe. It was fortunate for the patient that he did not possess these instruments, for the attempt to deliver *per vias naturales* through a conjugata vera of 4.8 cm. is, to say the least, an extremely dangerous procedure.

It would not be wise to draw far-reaching conclusions from the comparatively small number of cases operated upon after the classical method; but we may discuss a few points, and thus stimulate future observations.

When should the operation be performed? By selecting our own time we have the advantage of operating under the most favorable conditions. This benefit is counterbalanced by the danger of post-partum hemorrhage; besides, the os is generally undilated before the onset of labor, and does not afford a channel for the escape of the lochia.

It is a mistake to puncture the membranes; they should be preserved as long as possible, as there is then less danger of infection and the delivery of the child is more easy.

Abdomen and uterus should always be opened in the median line. Whether the incision is inside or outside of the first operating scar is immaterial.

Silver wire is the least desirable material for the uterine sutures. It is rigid and always remains a foreign body. Chromic catgut has given excellent results, but at present silk is the material mostly used.

We have no known means to prevent the formation of adhesions between the uterus and its surroundings; but these adhesions cause, as a rule, no unpleasant symptoms.

The comparatively frequent agglutination of the intestines to the abdominal wall should be borne in mind when making the abdominal incision.

When there is much injury to the peritoneum from the separation of adhesions, the drainage of the abdominal cavity with iodoform gauze is advisable. It is more elegant to close the whole abdominal wound immediately, but the first method has the advantage of greater security.

The abdominal wound should be closed by deep and superficial silk sutures.

I take pleasure in acknowledging my indebtedness, for his valuable aid and advice in the writing of this paper, to my highly esteemed teacher, Professor Leopold, Director of the Royal Hospital for Women, Dresden.

A CLINICAL NOTE ON INTRA-UTERINE IRRIGATION AFTER LABOR.¹

BY

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THE relation of micro-organisms to septic infection during the puerperal state has been thoroughly demonstrated and generally accepted. The application of aseptic methods in practical obstetrics has eliminated the greatest danger to which the lying-in woman was hitherto exposed. Yet in private practice deaths from so-called puerperal fever are of common occurrence, and limited degrees of septic infection—called milk fever, puerperal malaria, etc.—are the rule rather than exceptional. The lesser grades of septic peritonitis following labor form the primary period of a large class of cases of intrapelvic inflammation and tubo-ovarian disease met with in gynecological practice.

The prevention of puerperal sepsis, and the responsibility of the medical attendant and nurse in connection therewith, have been so emphasized and reduced to rule that no well-informed practitioner can be in doubt as to a course of action. It is altogether different, however, as to the proper treatment of cases of puerperal sepsis in the initial stages of the infective process. This process is oftentimes most insidious. A slight rigor; maybe only cold extremities, followed by a mild

¹ Read before the American Association of Obstetricians and Gynecologists, September 18th, 1891.

reaction ; or a pronounced chill, followed by high fever and copious sweating—may mark the invasion of the system by the poison. When such symptoms manifest themselves, the emergency is treated in a great variety of methods by different practitioners. Indeed, the most approved modern treatises on midwifery, while dealing explicitly with the essential methods of prophylaxis, give no definite or positive lines of treatment for the initial stage of puerperal sepsis. The most common treatment consists of vaginal injections, given in a desultory and imperfect manner by the nurse, with antipyrin or antifebrin administered internally, to be soon followed by opium to relieve the peritoneal pain. The result is often fatal, never satisfactory.

Some modern writers recommend intra-uterine irrigation with antiseptic solutions in such cases as have required the introduction of the hand or instruments into the uterus during the course of labor, especially in cases of adherent placenta requiring digital or instrumental removal. In these cases irrigation is directed to the prevention of the septic process. In many instances it is adopted too late, when extreme systemic intoxication has occurred. Many writers, in advising against the use of intra-uterine injections after labor as a routine practice (in which I fully concur), depict the dangers of injecting fluid into the cavity of the uterus, particularly the removal of clots and opening up afresh denuded surfaces, and entrance to the peritoneum through the Fallopian tubes. These dangers I believe to be theoretical rather than practical, and have no application to the method under consideration, except when unskilfully executed. It is the purpose of this note to show the value of systematic and repeated irrigation when the septic process is initiated, acting upon the principle of drainage and thus removing from the absorbing area all septic material.

The time for resorting to intra-uterine irrigation after labor is in the earliest stages of sepsis.

When there has been extensive laceration of the maternal parts, so as to expose vascular and fresh surfaces to the discharges from the uterus, we know the danger of infection is increased. When during labor examinations and manipulations have been necessary, or when precautions against sepsis

on the part of the physician and nurse have not been thorough, or the environment unsuitable, the accession of fever on the third or fourth day, with fetid discharges, should indicate at once the necessity of intra-uterine irrigation. When the absorption of septic products is marked by a rigor or pronounced chill, followed by high fever and tenderness above the pubes, no time should be lost in instituting systematic flushing of the uterine cavity. The operation should be repeated at intervals of two, four, or six hours, in accordance with the character and quantity of the discharge and the intensity of the symptoms.

The operation should be performed by the surgeon in person, with all the care of a thorough surgical procedure. In my opinion antiseptic agents are not essential, but our aim should be the thorough removal, by flushing the uterine cavity, of all débris and decomposing material lodging there, just as we apply the principle of drainage and irrigation to a septic cavity elsewhere in the organism. The patient should be gently lifted on to a table and placed in the semi-prone position. The perineum should be retracted with Sims' speculum. A fountain syringe should be used, and the small glass drainage tube used after abdominal section should be attached for introduction within the uterus. The water should be clean and previously boiled, and used while quite warm. The patient's clothing should be drawn out of the way, and the extremities protected with blankets. Care must be taken to permit free exit of the return flow from the uterus. A piece of iodoform gauze should be passed into the uterus and left until the next irrigation. The patient should be carefully rubbed dry with a towel, the pad applied, and returned to bed without unnecessary delay. When done in a careful and gentle way, with water at the proper temperature, the patient's comfort is enhanced and the improvement in her symptoms is, as a rule, immediate. The principle of treatment is that of flushing and drainage, the efficiency of which has been demonstrated so notably in similar conditions known to pelvic surgery.

Of a number of cases of puerperal sepsis treated in the primary stages, I have selected the following to illustrate the efficiency of this method of treatment: Mrs. G. F. A., age

28, mother of three children, was confined at her home in the country. The labor was uncomplicated, and completed without any notable incident. The child was born Sunday. On Wednesday she was seized with a violent chill, followed by high fever, with pain and distention in the belly. I saw her for the first time on Thursday at 9 p.m. The physician in attendance informed me that he had visited a case of puerperal fever the day before attending this lady, and believed that he had taken sufficient precautions to prevent infection. The pulse was 123, temperature 103.5° F.; the face flushed; tongue dry; lower limbs drawn upward; swelling outlined the uterus and broad ligaments; the vagina was hot and the lochia had ceased. The patient was lifted to a table and placed in the semi-prone position. The perineum was retracted with Sims' speculum. A double-current metal catheter was introduced into the uterus with a Davidson syringe attached. The cavity of the uterus was thoroughly irrigated with warm water. A quantity of greenish fluid, containing broken-down clots and placental débris, came away. The irrigation was repeated every four hours for four days. Epsom salt was administered daily. The improvement was marked from the beginning of the treatment, temperature and pulse and the local symptoms bearing testimony to the rapid elimination of the poison. Her recovery was prompt, and that it was complete is attested by the fact that two years afterward she gave birth to another child.

Of course intra-uterine irrigation is just as applicable to the early stages of septic infection after abortion and miscarriage as after labor at term; and in cases in which manual detachment of the placenta has been necessary, its use may be supplemented with the application of the dull curette or Simon's spoon.

TRANSACTIONS OF THE AMERICAN GYNECOLOGICAL SOCIETY.

SIXTEENTH ANNUAL MEETING.

HELD IN WASHINGTON, D. C., SEPTEMBER 22D, 23D, AND 24TH, 1891.

FIRST DAY—MORNING SESSION.

The President, DR. A. REEVES JACKSON, in the Chair.

DR. JOSEPH TABER JOHNSON, of Washington, delivered the

ADDRESS OF WELCOME.

DR. JOHN C. REEVE, of Dayton, O., read a paper entitled
ADVANTAGES OF MIXED NARCOSIS IN GYNECOLOGICAL SURGERY.

There are special features of many operations of gynecology, abdominal and plastic, that require the most profound and uninterrupted anesthesia for their successful performance. This condition is assured by the hypodermatic injection of morphine and atropine before the inhalation. For more than twenty years Dr. Reeve has resorted to this procedure in every operation of notable duration or severity.

The advantages of the method consist in the facility of production of anesthesia, steadiness of its maintenance, profoundness, and diminution of struggling in the early stages and of vomiting afterward.

The great point in artificial anesthesia is danger. The speaker adduced the points in support of the superior safety of the mixed method: 1. The emotional state is nearly abolished by the narcotics. 2. A much smaller quantity of the anesthetic is required. 3. A shortened and diminished struggling stage. 4. The stimulating influence of atropine upon cardiac action and respiration. 5. The effect of morphine in lessening reflex inhibition. 6. Experiments upon animals.

Finally, the question of the combination of the narcotics with ether was considered, since almost all experience had been with chloroform as the anesthetic. The speaker had exclusively used the A. C. E. mixture, which is one-half ether. His experience with the method had been unbroken by accident or by threatening of danger. He had used it in one

patient that under a previous administration had the narrowest escape he ever saw under anesthetics, and there were no disturbing symptoms.

In none of the few cases in which death had occurred was this sudden and typical of death under anesthetics. In every instance the fatal termination took place some hours after the administration.

DR. WARREN SAWYER, of Chicago, had found mixed narcosis valuable in preparing patients for the application of the forceps or other minor obstetrical procedure.

DR. J. M. BALDY, of Philadelphia, had employed mixed narcosis, with ether as the anesthetic, but when he could have full personal control of the preparation of the patient for operation he had not found any essential difference between simple and mixed narcosis. He believed that most of the struggling of the patient during the anesthesia was due to gastro-intestinal irritation; and when he had cleared out the gastro-intestinal tract prior to the operation the patient had remained just as passive as in the cases in which he had used mixed narcosis.

DR. WILLIAM T. HOWARD, of Baltimore, was strongly in favor of ether as an anesthetic, because it took a much smaller amount to anesthetize a patient and the struggling was less. He believed that, although ether caused less nausea than chloroform, neither secured immunity from vomiting, and he was glad to hear of the good results of mixed narcosis.

DR. JOHN BYRNE, of Brooklyn, had used mixed narcosis for many years, with ether as the anesthetic, and believed that all the good effects claimed by Dr. Reeve could be obtained as well when ether was used as the anesthetic instead of the A. C. E. mixture.

DR. HENRY C. COE, of New York, read a paper entitled

CONCEALED ACCIDENTAL HEMORRHAGE DURING LABOR.

The etiology of these non-traumatic cases is obscure. Among the predisposing factors may be mentioned the hemorrhagic diathesis, fatty or calcareous degeneration of the placenta, and irregular uterine contractions. In a case of his own the two latter conditions had been present.

The initial symptoms are fairly uniform. The contractions, previously strong, become feeble and irregular without apparent cause; dilatation is retarded and localized pain takes the place of the pains of labor; while external palpation shows tenderness and auscultation reveals irregularity of the fetal heart. During the early stages the patient may become restless and irritable, but the pulse remains unaffected. When

the hemorrhage has advanced to external discharge, labor pains have, as a rule, entirely ceased, a doughy sensation is obtained upon abdominal palpation, and the fetal heart is not heard. Profuse external hemorrhage is not common; the diagnosis is simply confirmed by its presence. Spontaneous delivery is the exception in these cases. Apparently shock is frequently the fatal element. The discharge of the same quantity of blood into the peritoneal cavity does not give a more sudden and fatal result.

The differential diagnosis should include rupture of the uterus, a severe attack of colic, and hydramnios with uterine inertia. The presence of labor will mask this symptom, and it should not be forgotten that colic and labor may co-exist.

Prognosis.—This accident is seldom recognized until it has assumed a serious aspect, so that even the mother can be only with difficulty saved, while we can assume that the child will perish. If the cervix is already dilated and the head engaged, we may, however, also save the child.

In treatment there is difference of opinion among different authors. It is desirable that we should have before us a few clear and concise rules. The question in treatment is whether we should rapidly empty the uterus or not. It is here sufficient to say that the results of the temporizing methods show a mortality of seventy-five per cent, while rapid delivery shows a mortality of thirty per cent. Ergot is recommended, even in cases of atonic uterus with the cervix undilated and the head not yet engaged. This is erroneous; we cannot wait for the action of ergot, but should dilate and deliver.

Stimulate by the mouth and rectum, and send for a skilled obstetrician, requesting him to come prepared for craniotomy; warn the family of the serious nature of the case. Having the patient completely anesthetized, dilate the cervix manually and rupture the membranes. Depend upon Barnes' dilators only where life is not in danger. Turn and delay for a few minutes, then extract, or, if the head is engaged, do craniotomy. If the cervix is dilatable and the head engaged, craniotomy should be preferred to the forceps. In the event of post-partum hemorrhage, if you wait for hot water, etc., you will lose your patient; tampon at once. After delivery pass your hand into the uterus, turn out the placenta and clots, and stuff the cavity. The procedure is not new; it is the simplest, most effective, and most correct.

The practice of obstetrics is associated with peculiar anxieties, with sudden and unforeseen complications. When called to any case, we may have in that case an emergency so rare as to rank among scientific curiosities. It is important, therefore, to have in mind what to do in even these rare conditions.

DR. CHARLES JEWETT, of Brooklyn, would rank as the most prominent etiological factor a condition of the vessels favoring easy separation of the placenta, and, next in importance, violent uterine contractions. In a case of his own the patient had been taking twenty-grain doses of quinine for some time previously, and there was undue violence of the pains. The case had resulted fatally before a positive diagnosis had been made. Persistent abdominal pain should lead to careful abdominal palpation. An important indication was failure of the fetal heart. He agreed with the reader of the paper that we should avoid rupturing the membranes until the cervix is fully dilated. By premature rupture we interfere with the mechanism of the first stage; while if the uterus is contracted the vessels are at least partly ligated. Delivery should be accelerated after the first stage, although even here too precipitate action might be a mistake. Stimulants should have time to act, if we would save life. Recent experience had given him confidence in the tampon as a means of arresting hemorrhage, so that he now carried a can of iodoformized gauze in his obstetric bag. Its use should be familiar to every obstetrical practitioner.

DR. R. A. MURRAY, of New York.—Treatment must be considered from the standpoint of the stage of labor: whether the hemorrhage is discovered before or after dilatation of the os. In a case with rapid enlargement of the abdomen, with severe pain and a doughy feel, he had, with the aid of assistants, elevated the limbs and compressed the arteries of the extremities; the pains, which had ceased, were resumed, and manual dilatation of the os and rupture of the membranes were followed by natural delivery and the discharge of a basinful of clots. In this case it had been his aim to keep the brain alive. The hemorrhage had been extensive and the shock severe. In another case he had ruptured and applied forceps. In both cases fatty and calcareous degeneration of the placenta had been present; in one he had suspected syphilis.

The speaker believed in tamponment of the uterus; we can, however, tampon the vagina before the cervix is dilated, and limit hemorrhage. Barnes' recommendation of premature rupture of the membranes, as in placenta previa, is not to be adopted on account of the uterine atony which follows.

DR. H. D. FRY, of Washington.—Treatment must depend upon whether the os is or is not dilated. Tamponment from below was not worthy of confidence. He had seen cases post mortem in which the placenta had been entirely separated from the uterus. The vaginal tampon may prevent the outflow, but it does not prevent the fatal result. He asked whether the reader of the paper did not recognize the surgi-

cal treatment of this condition. Tait had operated in cases of ante-partum hemorrhage, saving fifty per cent. William Smylie had presented before the British Medical Association, July last, the report of a case of concealed hemorrhage with threatened collapse in which he had done Porro's section and found the uterus filled with clots. The patient recovered. It was a question whether the patient had not a better chance for life by the Porro operation, which prevented the danger of post-partum hemorrhage.

DR. EDWARD REYNOLDS, of Boston, had had charge of upward of three thousand women before and during labor, and had had but a single case of accidental or concealed hemorrhage, ante-partum hemorrhage, severe enough to require treatment or to merit report. He had been called in as consultant in this case; the woman was in collapse, and the hand upon the abdomen had come into such close proximity to the extremities of the fetus that he had believed that rupture of the uterus had occurred; the abdomen was distended laterally. The head was on the perineum; he had applied the forceps and delivered easily. Passing the hand immediately into the uterus, he had found the after-birth within the os and had turned it out, together with two large clots, one as large as the fetal head. The hand stimulated contraction; there was no rupture, but the wall of the uterus was scarcely thicker than a layer of drilling. There seemed to be no reason for the universal relaxation of the uterus or the enormous quantity of coagulated blood. But a small discharge followed delivery.

DR. A. PALMER DUDLEY, of New York, referred to the tumor between the placenta and the uterus as a diagnostic sign. This tumor has a sickle-shaped edge and obscures the parts of the child. It is not present in all cases, but where present is of emphatic value. Retraction of the uterus is a certain means of checking hemorrhage. Efforts should be directed towards this result where cases are seen early. Excessive loss of blood induces post-partum inertia and atony. Etherization should be prompt, the cervix should be dilated, and the hand passed to the side of the membranes to allow of the escape of clots by the cervix. We may prevent atony by this measure, although it may sacrifice the child. Ether stimulates the pulse and relieves the rigidity of the os found in partial collapse. Too rapid emptying of the uterus increases shock. He did not, however, hesitate to turn and perform a moderately rapid extraction. Had had no experience with tamponment of the uterus. In his own practice he used astringents; Monsel's solution had been employed. He had had three cases and two had lived; he had had no bad after-results in these cases. Strict asepsis had been, however, maintained.

DR. A. J. C. SKENE, of Brooklyn, referred to two classes of concealed ante-partum hemorrhage—one of a mild character, with partial detachment of the placenta, and quite frequent; the second where the hemorrhage was profuse. He understood that it was the latter class which was under consideration. The condition of the patient was in these cases very grave. In Dr. Murray's case it had been all that he could do, with the aid of assistants, to keep life in. Porro's statistics had not been very favorable under more promising circumstances. It would be better, he thought, to discard this operation altogether in connection with the conditions named.

DR. J. M. BALDY, of Philadelphia, referred to a case in which he had left his patient in a satisfactory condition one hour from delivery, but had been recalled at the end of a half-hour to find the patient pale and the abdomen nearly half as large as before labor. He had emptied the uterus of a large clot; there had been no external hemorrhage. Upon the re-introduction of the hand the uterus speedily contracted. Ergot was administered, and there was no further relaxation.

DR. T. A. EMMET, of New York, suggested inversion of the uterus and the application of an elastic ligature in the place of removal by Porro's operation in these cases.

DR. COE closed the discussion. He feared that he had failed to give a correct impression upon one point. He would not extract precipitately. He would stimulate both before the operation and during dilatation. It required also some time to dilate enough for version, so that from ten to fifteen minutes elapsed during which stimulants were pushed. The most important point was to know how to deliver most rapidly without increasing the existing shock.

The accessory tumor described by Dr. Reynolds had not been present in his own case. The abdominal wall was rigid. He had not mentioned Porro's operation; the circumstances differed from those of rupture of the uterus, where we had an active hemorrhage into the abdominal cavity. In concealed hemorrhage the bleeding was into a closed cavity. The indications were to promptly and gently empty the uterus without adding to the shock. Abdominal section was too desperate a venture under the circumstances.

DR. EDWARD W. JENKS, of Detroit, read a paper entitled

THE THERAPEUTIC ASPECTS OF SOME OVARIAN DISORDERS.

The paper distinguished between hospital patients and those treated in their own homes. In the first class operative measures were often to be preferred where, with sufficient

time, relief could be given by other means. Recovery from operation, and cure, were not synonymous terms. The removal of ovaries and tubes for pain was rarely satisfactory. In a case presenting hysterical symptoms, with long-continued pain referred to diseased ovaries, the abdomen was opened, but the condition found did not warrant the removal of the ovaries. The patient believed, however, they had been removed, recovered, and remained free from pain.

Catarrhal and purulent or hypertrophic disease of the tubes should be as amenable to treatment as similar endometrial conditions. Many cases of pain could be referred to a malarial origin and would yield to quinine. Catarrhal tubes rarely rupture; they more frequently drain. The reader referred to a case of spontaneous cure followed by pregnancy. Electricity was useful as a general nerve tonic; locally it might do harm. Even a weak galvanic current had been known to exacerbate existing conditions. The saturated glycerin tampon was too depleting for some cases.

DR. A. F. CURRIER, of New York, reminded the reader of the paper that conservative measures were already receiving recognition. Four years ago Dr. Battey had in fifteen years but fifty-four times performed the operation which bears his name. The keynote of his paper at that time was that, notwithstanding existing experience, we still needed more careful selection of cases in order to obtain the greatest benefit from the operation. Several formerly accepted indications have been disposed of. Laparotomy for mental trouble has been practically abandoned; also laparotomy for pain. We now require decisive indications of actual disease before proceeding to operation. Still, however, care in the selection of cases and judgment in regard to the method of operation cannot be too strongly impressed upon the profession.

DR. H. C. COE, of New York, stated that the last four or five years had worked a great change in the subject under discussion. It was now rare in New York to remove appendages which did not demonstrate actual disease. Conservative treatment should, however, take into consideration the dangers of pregnancy and the puerperal state. With pus in the tubes, the woman was in imminent danger after delivery, many obscure cases of puerperal infection being due to this cause. In regard to the partial operation, or the removal of the cystic portion of the ovary, Martin's statistics, including over eighty cases, had not shown results as favorable as had been hoped, a second operation having been in some cases required.

DR. J. M. BALDY, of Philadelphia, regarded all non-operable all cases of neurasthenia, hysteria, and insanity. In other

cases recovery from the operation did not always mean that the patient was cured of her disease. In Philadelphia it was very common to have these patients return, after operation, worse off, at least no better. He drew a line, too, in the matter of treatment between rich and poor women. The poor woman without proper care would have repeated attacks of peritonitis, where the rich woman with care would escape it. It was justifiable to take more operative risks in the first case than in the latter. A curious circumstance was the fact that the mortality was greater in operative cases where the general condition was good than in cases where the patient was broken down and apparently injured to suffering. The inference was, to avoid operation where the general health was not impaired. It was better to allow the patient to go on to the menopause in a large proportion of these cases. He had never seen serious trouble from chronic adherent catarrhal salpingitis after the menopause. Previous to the menopause he would control the periodic congestion so far as possible.

DR. JENKS closed the discussion. The object of his paper would be attained if operations were limited to skilled operators. He was glad to know of the improvement to be found in New York in the selection of cases, and hoped that the conservative practice of New York would in time penetrate to the remoter hamlets of the country.

FIRST DAY—AFTERNOON SESSION.

DR. J. M. BALDY read a paper entitled

INSANITY FOLLOWING LAPARATOMY.

The paper presented statistics from the insane asylums of Pennsylvania in regard to the number of insane patients admitted after laparotomy during the last five years. From eighteen institutions he had obtained reports of fifteen cases. In eleven of these cases there had been previous mental derangement, leaving four only who had become mentally unsound after laparotomy. Other gynecological operations also were followed by insanity. He had had two cases of his own. In the first, operation was done for rectocele and cystocele, and the patient had been etherized for one hour. Dry heat had been subsequently applied to the extremities, and, through inefficiency, the patient had been burned in a half-dozen places. Sloughs followed, and the patient developed melancholia, but subsequently recovered.

The second case had suffered previously from menstrual

mania characterized by screaming spells. The abdominal section revealed the ovaries so bound down that they were with difficulty enucleated. The patient recovered slowly from the anesthetic, and developed mania which terminated in death. Only the abdominal organs were examined. The site of the operation was found in a perfect condition, cerebral apoplexy or exhaustion being the apparent cause of death. There were several factors probably active in such cases, among which were a previous insane taint, the anesthetic, fear of the operation, and sepsis in a certain proportion of cases. In a number of cases alcoholism had been referred to as a cause. Dr. Mary Putnam Jacobi had assumed dilatation of the abdominal blood vessels from reflex inhibition of the splanchnics. Three cases had been reported in which there was a marked exudate around the ligatures, causing a concentrated peripheral irritation, and the nervous derangement had here been considered as a reflex from the healing process in the peritoneum. This theory was substantially the same as Dr. Mary Putnam Jacobi's. The reader did not think these theories sustained. He did not think any one factor sufficient to account for the result. We had to have, in the first place, a peculiar condition of the nervous system as a predisposing cause, when the explosion could be accounted for by the shock of the operation or the anesthetic. The recognition of the predisposing cause was an important matter. In cases where there was a family history of mental disease, it should receive the surgeon's consideration.

It might be added that insanity following operations is not limited to women. Of eighteen cases collected by Dr. Leidy, ten were in men and eight only in women. Of the eight, in four the operation was done for cancer of the breast; in two only was the operation upon the sexual organs. Of the operations upon men not one was upon the sexual organs.

The prognosis is good; melancholia is the type of insanity as a rule developed, and the majority recover.

DR. JOSEPH E. JANVRIN read a paper entitled

A CLINICAL STUDY OF PRIMARY CARCINOMATOUS NEOPLASMS
BETWEEN THE LAYERS OF THE BROAD LIGAMENT.

The paper stated that malignant neoplasms other than those of the ovaries do occur primarily in the folds of the broad ligament. Three cases were reported, two of sarcomata and one of carcinoma. In two of the cases local injury preceded the growth. In one case ergotin had been injected into the wall of the tube for a fibroid growth. In the case of cancer, adenoid hypertrophy had been treated by the gal-

vanic current. There was danger from incomplete removal in this condition. The basement membrane might give way, the degenerated epithelial elements fall back into the lymph spaces. The specimen showed adeno-carcinoma undergoing progression to carcinoma.

DR. A. W. JOHNSTONE, of Cincinnati, believed that if specimens were more carefully examined the conditions described would be more frequently found. He believed that many simple cases of ovariectomy have cancer at the time of operation, as the abdomen not infrequently fills up subsequently with secondary growths. The transition of adenoma to carcinoma was observed in the testicle and other organs where cancer was found.

DR. A. P. DUDLEY, of New York, thought that the element of etiology in Dr. Janvrin's cases would bear emphasis. In two of the cases the starting point had appeared to be injections for a supposed fibroid tumor. He had himself seen a case of malignant disease of the broad ligament, with the history of injections as the starting point of the disease. He had seen a case in Apostoli's clinic this summer in which malignant disease of the broad ligament had followed treatment by electricity; the parts had been burned and cancer had developed. An overdose of electricity or an injection of ergot may equally disturb nutrition.

DR. A. F. A. KING, of Washington, regarded cancer as a result of deficient innervation or a deficient government of nutrition by the nervous system. Excessive doses of electricity would paralyze or destroy nerve fibres. A parallel condition was present in the uterus after the menopause. With cessation of the reproductive function there was involution or a normal atrophy of the nervous system. If then the blood supply continued, cancer might result.

DR. JANVRIN closed the discussion. The reported cases were rare; possibly the condition itself was also rare. Probably, however, a larger number of cases would be found if microscopical examinations of removed organs were more often made. He was glad to hear from Dr. Dudley of the case seen with Apostoli in Paris. He believed that nearly all cases of cancer, whether located in the uterus or elsewhere, resulted from injury. He did not believe in inherited tendencies. Cancer was of course a perversion of nutrition, and nerve influence was one of its prime factors.

DR. PARISH, of Philadelphia, read a paper for Dr. ROBERT E. HARRIS entitled

THE PRESENT AND IMPROVING STATUS OF CESAREAN SURGERY.

Porro's operation was presented in 1876, and the improved

Cesarean section in 1880. Garrigues' first operation by the improved method was done in October, 1882. In the improved Cesarean operation the uterine wound is closed by two rows of stitches, thirty stitches being in many cases used. The object of the multiple suturing is to prevent leakage. This is especially indicated in cases of cancer of the cervix or where the fetus is dead. Here even a larger number, running up to fifty stitches or more, had been used. If, on the contrary, the woman was in good health and the fetus in good condition, twelve or fifteen might be sufficient. In this country we too often depended upon the uninterrupted suture or upon a single row. We have had, however, a number of recent successes. Lusk, Price, and Kelly have together operated upon ten cases with the loss of but one woman, all of the children being born alive. The greatest obstacle to success is the fact that the patients are not subjected to the operation, as a rule, until delivery has already been attempted by other means. The conservative Cesarean operation includes ligation of the tubes. This procedure is here in its infancy. Theoretically, removal of the ovaries would seem to be preferable to tying off the tubes.

DR. H. J. GARRIGUES, of New York.—The improved Cesarean operation was usually referred to as Säger's operation. The fact was that Säger had collected cases, among which his own stands eighth in point of time. The speaker's operation stands third, and was done so soon after the two first that he was at the time in ignorance of their performance. Säger presented no new features, every step of the operation having been previously done by some one else. The important distinction is the use of the uterine suture. The "new or improved Cesarean operation" was to be preferred as nomenclature, many men having contributed to its present perfection. As to the comparative success obtained in this country, that might be explained by our peculiar hospital service. In European hospitals one man has the service the year through; this man has, too, one assistant, himself often, while assistant, already skilful and distinguished. Here, on the contrary, we have the English system, the service being divided among three or four men, and the assistants recent graduates. Further, aseptic midwifery is not so general here as in Germany, where the most simple case is attended with the strictest precautions. Here, on the contrary, the case for operation comes to you often already infected. The mortality of Cesarean section was, however, still high, and personally he did not hesitate to perform craniotomy upon the living child in certain cases. It was a question whether ligation of the tube was safe, whether hematocele might not develop.

DR. H. D. FRY, of Washington, had done the operation successfully. The case was seen early, labor having been in progress but three or four hours, and the patient's condition good.

DR. A. P. DUDLEY, of New York, raised the question as to whether the improvement in Cesarean work justified its substitution for craniotomy. He believed that it did. The comparison between our results and those of foreign hospitals was partly due to the fact that there the patient was in the hospital for some weeks previous to the operation; she was under observation and could be suitably prepared.

DR. H. C. COE, of New York, regarded the improved Cesarean as the elective operation. He referred to the work of the Maternity Hospital. The patients were examined, as soon as entered, for pelvic deformity. If there was necessity for operation, they were made ready, and the operations had been uniformly successful.

DR. R. A. MURRAY, of New York, also advocated the Cesarean operation from the elective standpoint. The results should be at least as good as those of ovariectomy. We had here no adhesions, no danger of hemorrhage, and sepsis should be as certainly avoided. Where the patient was already exhausted or infected by attempts at other procedures, the conditions were different. He thought that in favorable cases the statistics should be better than those of craniotomy.

DR. PARISH closed the discussion. As a matter of election, he knew that Dr. Harris did not favor craniotomy, but he knew also that he favored consulting the wishes of the woman in the matter. He agreed that the comparative failure of obstetric surgeons in this country had not been the fault of the individuals, but rather of the system of education. Pelvimetry was not generally understood; the patient was too often not examined at all until labor was established, and this accusation referred not only to the country but also to the city practitioner. Porro's operation entailed greater risk to the woman than either craniotomy or the Cesarean section. He thought that the mortality of the Cesarean section should be reduced. Craniotomy was now preferred, he thought, because the practitioner was not prepared for section. The tendency was to do almost anything else first. In two instances he had found rupture of the uterus and the woman moribund before he was called in.

SECOND DAY—MORNING SESSION.

DR. H. MARION SIMS, of New York, read a paper entitled

UNIQUE CASE OF MULTIPLE NEURO-LIPOMATA FOLLOWING
LAPARATOMY.

The patient was married in 1884, was 18 years of age and healthy. Ten days after marriage she presented herself a mental and physical wreck. Exsection of the hymen was done and the nervous symptoms disappeared. Within six or seven months, however, the patient commenced to have convulsions almost epileptic in form. When seen she was six months pregnant. The convulsions recurred several times each day, and lasted from five to twenty minutes. There was at the same time violent pain in the region of the left ovary, which was enlarged to the size of a pigeon's egg. The convulsions were referred to the pressure of the uterus on this displaced ovary. Inhalations of the nitrite of amyl relieved the convulsions, so that the time up to labor was passed with comparative comfort. The patient was delivered in June, 1885. The convulsive attacks continued, and one week after delivery the ovary was found behind the uterus, subjected to pressure from this organ. Tampons were used for several weeks, but gave only temporary relief. Dr. C. C. Lee was called in consultation, and agreed with the author as to the advisability of laparotomy. Two diseased ovaries were removed with the tubes. The patient had a hysterio-epileptic attack a few hours after the operation, none since. The patient was again discharged as cured. Soon after, however, she developed pain in a region which could be covered by a five-cent nickel, one inch below and to the right of the umbilicus. The part was sensitive to touch, and a hard, rounded growth the size of a duck-shot was felt under the skin. The part was frozen with ice dipped in salt, an incision was made, and the body enucleated. As it was removed the author had felt something stretch and break, like a thread, and between the fingers the body was found to consist of a hardened mass of fat with a thread-like filament passing through its centre. After removal the sensitiveness and pain disappeared. The wound was packed and allowed to heal by granulation.

Later a similar complaint led to the removal of a nest of these bodies from the other side, consisting of the same masses of fat, connective tissue, and nerve filament. Several weeks later a new colony was removed from above the symphysis pubis. The last growth was removed in the thirtieth month from the first development, in all twenty-eight incisions having been made. Specimens were shown at the Pathological

Society and to various neurologists and surgeons without finding a parallel case.

DR. GARRIGUES asked why the wounds had been stuffed with gauze.

DR. SIMS replied that the fatty exudation was so abundant as to require this treatment, the layer of adipose being two to two and a half inches thick.

THE PRESIDENT delivered the

ANNUAL ADDRESS.

The Society had been organized in the New York Academy of Medicine in 1876, with nineteen members, of which number thirteen survived. The object of the Association had been the amelioration of the diseases, accidents, and infirmities of women. The speaker referred to the recent deaths of Drs. Fordyce Barker, David Humphrey Storer (an honorary member), and George H. Lyman, one of the founders.

There is a limit to the knowledge of any given individual and of any given community. Some approach only nearer to the shrine than others. Attempts to add to knowledge, even if characterized by failure, add to history. In this light medical history has taken giant strides during the past few years. Medical science has always been obscured by error, the path of its progress has been strewn with dead and dying delusions. The speaker referred to the time when "ulceration of the womb" comprised the sum of pelvic disorders, to the "womb splitting" delusion, and to the more recent mania for the repair of the lacerated cervix. Barker had seen the growing tendency toward the exclusive surgical treatment of the diseases of women, but his remonstrances had been disregarded and the surgical era had been entered upon. Dr. Robert Battey bore a close and not discreditable relation to this movement. Noting that much suffering ceased upon the establishment of the menopause, he devised his operation of removal of the ovaries for the artificial production of the change of life. The work of Dr. Battey marked an epoch in gynecological history. Tait followed with the simultaneous removal of the tubes with the ovaries, and an enthusiasm for extirpation succeeded until right of tenancy in the pelvis was denied to any organ which was the seat of pain. An aching tooth had far greater privileges. Within a few days or hours the exploit was reported, if the patient survived. The reports give "cirrhosis of the ovary," "commencing degeneration," "tendency to cystic disease," as reasons for removal, the latter meaning only that Graafian follicles were present. The speaker did not want to be understood as objecting to the removal of purulent collections. While

needless, useless, and injurious surgery required the finger of condemnation, true conservatism did not exclude prompt curative measures. Every surgical operation was, however, characterized by more or less danger; it was not justified if discomfort only was present.

Gynecological abuses are not all found upon the plane of surgical procedures. Examination of girls and unmarried women was mentioned as too frequent and often unjustifiable. The imponderables in etiology should receive recognition; hasty and immature reports should be avoided; time, the prover of all things, should have opportunity; in particular, censorship was recommended of the material presented for the volume of transactions.

DR. WILLIAM H. BAKER, of Boston, read a paper entitled

CANCER OF THE CERVIX UTERI—THE RESULTS OF TREATMENT
BY AMPUTATION.

The proportion of cases suitable for operation is small if compared with the number in which symptomatic treatment only can be applied. The reader's previous report, made in 1882, covered five years, during which time he had seen forty-seven cases, and of these twelve only had been operable. In the seven subsequent years he had seen but sixteen cases in which he could offer hope of relief by amputation. Of the cases reported in 1882, fifty per cent remained well at the end of ten to twelve years. In one case he had been obliged to reopen the cervix for the escape of menstrual blood.

The second series comprised cases operated upon from January 26th, 1882, to the same date in 1889—in all sixteen cases. There had been in this series no death from the operation, and in ten of the cases no recurrence of the disease. One case was well at the end of eight years, two at the end of seven years, three at the end of six years, three at the end of three years, and one at the end of two years. Fifty-three and two-thirds per cent were at present well; the remainder had died from intercurrent diseases.

The operation consisted in the removal of the diseased tissue with the scissors or the scalpel, the application of the cauter, and healing by granulation. Previous removal by the scissors was preferable to entire cauter treatment, as sight and touch were not obscured as where the cauter was used for removal. To limit hemorrhage, pass a silver ligature through the lateral vaginal walls so as to include the uterine arteries. With an additional extra twist or two you can control the bleeding as you proceed. The application of the cauter is the most important part of the operation, and you cannot be too thorough in its use. By

this method not only the infravaginal but the supravaginal portion of the cervix, or even one-third or one-half of the body of the uterus, may be removed. Compared with vaginal hysterectomy, the operation of high amputation presents the advantages of greater safety to life and longer freedom from recurrence. Even where the anterior or posterior vaginal wall is involved, the perforation of the peritoneal cavity or bladder, increases the danger of the operation but little. Extension of the operation laterally only slightly increases the danger. A slight secondary operation is often necessary. Vaginal hysterectomy should be reserved for cases of primary cancer of the corpus.

To advance the curative treatment of cancer of the uterus, physicians should educate women that hemorrhage and leucorrhea are not essential to the climacteric. If the physician does not understand the origin of these conditions he should be honest enough to say so, and he should not delay the removal of a portion of the cervix for microscopical examination in a doubtful case. It was desirable that the physician should have a well-grounded belief in the value of operative interference. To this end patients should be kept under observation after operation longer than had been generally thought necessary. Freedom from recurrence for eighteen months or two years was of little value, except as indicating the mortality of the operation itself.

DR. JOHN BYRNE stated that high amputation could be as thoroughly done by means of a delicate cautery knife as by the scalpel or scissors, the subjacent tissues being at the same time subjected to this destructive agent, so destructive to cancer itself. The diverging tenaculum was used to draw the cervix down; a circular incision was made, oblique upward and inward. The loop of the cautery *écraseur* was then applied, and with two cells the cervix was slowly severed and lifted out. What remains of the cervical and uterine canal was then scraped and cauterized. Finally a dome-shaped cautery instrument, heated to a cherry-red, was applied to the excavation. While in accord with the principles of high amputation as stated by the author of the paper, he preferred the cautery and knife, which he had used for many years, to the scalpel and scissors. These cautery instruments were not oftener used, probably, because they could not be bought; he was obliged to construct his own. The essential part of the operation was the final cauterization. Here it was of no use to apply the heated instrument to wet tissue. We did not want stewing of the parts; a dry roast was required.

DR. T. A. REAMY, of Cincinnati, had been pleased with the statistics shown. There could be no doubt as to the disease present, the character of the treatment, or the results reported.

We had here sixty per cent of cures—a showing which could not be surpassed by any record of total extirpation with which he was acquainted. The number of the cases was no cause for objection. More could be learned from such a record than from a report of one hundred, two hundred, or five hundred cases compiled in a haphazard way. The speaker did not himself use the cautery in these cases, but, where the disease is restricted to the portio vaginalis, dissected it out with the scissors only, and closed the wound with silver wire, securing primary union, thus avoiding cicatricial disturbance—which is considered one of the exciting causes of cancer—while the deformity is less. No one could be surprised at the claims of the previous speaker who was familiar with his skill. He did not himself have skill in the use of the cautery, and found it difficult to get dry tissue. The immediate result of the cautery was an outflow of blood. Where the tissues were extensively involved he would, however, in the future follow the scissors with the cautery in these cases.

DR. BAKER closed the discussion, referring to the fact that cervical cancer does not extend, as a rule, to the body, but laterally into the folds of the broad ligament. In total extirpation this field of the disease was necessarily neglected. Further, with a sound corpus above we have a better chance to observe recurrence, cicatricial closure of the roof of the vagina obscuring the field. He would reserve total extirpation for sarcoma of the body, for primary cancer of the body, and for cases of extension to the body, the uterus being still movable.

DR. H. J. GARRIGUES, of New York, read a paper entitled

THE BEST POSTURE IN THE DIFFERENT STAGES OF LABOR.

It was generally conceded that during the stage of dilatation the woman should stand, or sit, or walk; she should not bring the abdominal muscles into use, should not bear down nor exhaust her strength. During the passage of the head through the pelvis the patient may assume the semi-recumbent position upon the back. Protection of the perineum and enucleation of the head are facilitated by the left lateral decubitus; exposure to cold is avoided, and the woman has the sense of being hid. The pillow between the knees, or support by the nurse, is, as a rule, unnecessary. During and after the expulsion of the placenta the patient should lie upon the back with the head low.

DR. A. F. A. KING, of Washington, stated that rules for posture could not be applied in abnormal conditions. In the transverse position he had found the squatting posture of use,

the pressure of the thighs upon the abdomen being alone sufficient to effect turning of the child. The kneeling posture, with the heels pressing into the sacro-sciatic foramina, favored rotation of the head.

DR. W. GILL WYLIE, of New York, read a paper entitled

IMPERFECT DEVELOPMENT AS A CAUSE OF UTERINE DISEASE.

Laceration of the cervix is to be referred to imperfect development and disease of the cervix, rather than to the fact of labor. Mental development diverts force and tends to dwarf the development of the generative organs. From twenty years' study he was convinced that a surplus of physical and nerve force is required by the growing girl during her development. If between the years of 11 and 16 the girl used up her strength in social or mental activities, the generative organs would fail to develop up to the normal, and we should find leucorrhea, irregular and painful menstruation, an infantile and anteфлекed uterus, and diseased follicles or the granular erosions formerly called ulcers of the womb. A woman may suffer from mal-development even when otherwise in good health, indicated by leucorrhea, dragging sensations, pressure on the anus, a pain in the left side, nervousness, depression and hysteria, etc.

The results of imperfect development do not stop with leucorrhea and dysmenorrhea. Except in cases of early marriage, sterility is often added. Where pregnancy occurs we still have the diseased glands, the laceration which fails to heal, subinvolution, and displacements. With imperfect development of the ovaries we have sterility, reflex nervous disturbances, and conditions favorable to new growths.

The author did not object to the education of women. There was, however, time for the development of the brain after the growth of the sexual organs. To develop the brain at their expense was a bad preparation for future life. He did not favor rest during menstruation. It was an abnormal condition, causing constipation and abnormal habits. If the general health were good, active exercise out of doors should be allowed.

With the "flashes" of the menopause we find a hyperesthetic endometrium similar to that of the dysmenorrhea of the young girl. To dilate, straighten, and drain gives relief in both classes of cases.

DR. ARTHUR W. JOHNSTONE, of Cincinnati, had, in a paper four years ago, stated that if there were no infantile uteri and no abortions there would be no lacerations of the cervix. There were two divisions of mal-development: First, arrest of the cervix; second, arrest of the body. The infantile cer-

vix gave rise to catarrh and lacerations, while the larger proportion of diseased ovaries and tubes were associated with the infantile body, which was unable to get rid of its periodic congestions. He referred to a case—a sufferer since puberty, and now developing an ovarian tumor which he referred to interference with Severson's wave.

DR. H. T. BYFORD, of Chicago, read a paper entitled

THE TECHNIQUE OF VAGINAL FIXATION OF THE STUMP IN
ABDOMINAL HYSTERECTOMY,

reporting twenty cases, with one death. There are three methods of treatment for the stump: total extirpation, the intraperitoneal and the extraperitoneal method. Total extirpation presented the ideal, but the end did not justify the means, as it unduly prolonged the operation. The intraperitoneal method was objectionable from the character of the stump and the danger of secondary hemorrhage or slough if the ligature was too tight. Out of thirty cases A. Martin had had three deaths from anemia, two from intestinal paralysis, and one from hemorrhage. It was enough to say that this result was obtained in the hands of such a master. Ventral fixation produced unnatural traction, with danger of hernia. Vaginal fixation, on the other hand, was entirely safe; it was a shorter procedure than total extirpation, and it left the cervix in a natural location. The fact that the stump sloughs is no reasonable objection.

His technique is as follows:

“After ligating the broad ligaments, separating the bladder from the uterus, and placing the elastic ligature, guarded by pedicle pins, I have nothing to add except that I begin separating the peritoneum an inch above the attachment of the bladder. As to ligating the stump in three parts, I sometimes do this and sometimes only ligate the outer thirds or quarters which contain the large vessels, and place the sutures on the pared edges deep enough to act as efficient hemostatic agents. The latter procedure is sometimes an easier and quicker one in stumps that are dense and not unusually vascular in structure. The ends of the ligatures are all left about four inches long. I have not yet seen fit to neglect an efficient ligaturing of the stump, so as to depend entirely on the clamp. The elastic ligature is removed and the vagina perforated by hemostatic forceps pushed down between the thumb and cervix, as the stump is held in the palm of the left hand—a very easy manœuvre. I enlarge the vaginal rent by two short scissor snips laterally, two short ones diagonally, and a longer one forward in the median line under the slightly separated bladder. The longitudinal me-

dian cut bleeds less than a lateral one of equal length. The vaginal walls are held well up by forceps, so that there need be no danger of wounding the bladder, nor of losing sight of any large vaginal artery that might possibly be severed. The stump is then turned into the vagina and the long ends of the ligatures given to an assistant, who draws them out of the vulva and holds them. Instead now of putting on the clamps, I leave that as the last step. The advantage of this is twofold: the peritoneal cavity is closed before I soil my hand by the vaginal manipulation, and the sewing of the peritoneum over the stump can be done nearer the surface than if it were held down rigidly by the clamps. I then put the fingers of my left hand in the cul-de-sac of Douglas, and lift the cervix as high up toward the surface as possible, and sew the peritoneum from the bladder to the posterior wall of the cervix. As this may become a very difficult procedure in fleshy patients, I will give the steps in detail: I grasp, with needle forceps, a short, straight needle, armed with fine catgut, pierce through the bladder and peritoneum near the left stump, then through the peritoneum on the posterior surface of the cervix, and direct my assistant to tie a knot, which brings the bladder and peritoneum back over the stump; this while I am keeping my left hand in place under the stump, holding the intestines out of the way. Then I pierce the bladder peritoneum and cervical peritoneum again with my needle and place an uninterrupted suture across to the other pedicle. The catgut is drawn tight and the two ends tied before I remove my left hand and liberate the intestines. It is surprising what a small wound is left. In case the pelvis be deep I have the foot of the table raised for better light and to help keep the abdominal contents out of the way. The matter of keeping the operator's left hand steadily in place during the suturing is important, as the hand of an assistant is more in the way in a deep pelvis, and must manipulate the intestines more to keep them out of the field. If there remain any oozing, an extra catgut suture is passed so as to check it. The peritoneal cavity can now usually be closed without drainage. The patient is then placed in the lithotomy position, the vagina opened by retractors, the clamp slipped over the stump, oozing from the anterior wall of the cervix checked by diluted Monsel's solution, and the vagina loosely packed with iodoform gauze, to be left for three days. At the end of the fourth day the vagina is gently irrigated with plain warm water, and after that twice a day with a one-per-cent carbolic solution."

SECOND DAY—AFTERNOON SESSION.

Discussion of Dr. Baker's paper (continued).

DR. JOSEPH E. JANVRIN, of New York, urged that in suspected cancer examination of the cervix should include curetting and microscopical examination of the corporeal endometrium, which should be curetted. In many cases where apparently the cervix only was diseased, the lining of the body also would be found to be implicated. High amputation had a sure footing, it could be made use of in a limited field, but it remained still a question whether it was the best treatment in even this limited field, and it would probably be years before the statistics of this class of cases will be eliminated from the general statistics of vaginal hysterectomy. In the meantime he would continue to operate by total extirpation, trusting to the accumulation of statistics for maturer judgment. He had done twelve operations in five years, with ten recoveries. The only fair way to decide the question in regard to vaginal hysterectomy as an elective operation was to collect its statistics and to compare them with those of Drs. Baker, Byrne, and others.

DR. WYLIE referred to the fact that Dr. Sims had done high amputation, using chloride of zinc instead of the cautery, with good results. He had practised this method for sixteen years, and had not taken kindly to hysterectomy, which he had commenced to practise five years ago. He had done this operation now in thirty-five cases, with one death—a case in which chronic Bright's disease developed acute Bright's after the operation. He did not now regard the operation as more dangerous than high amputation. The only adverse argument worth considering was the fact that in avoiding the ureters you were apt to neglect the removal of lateral extensions of the growth. The cautery or the chloride of zinc could be used afterward, if desired. He now preferred the radical operation on general surgical principles. In cancer of the breast we remove not only the whole breast but also all glands likely to be involved. Recurrence should be more likely in the scarred uterus than where the whole organ had been removed. Dr. Baker had admitted that the opening of the peritoneum added but little to the gravity of the operation. It was a difficult matter, too, to decide whether or not the body was or was not involved.

It was his practice to etherize and to scrape away necrosed tissue, doing almost as complete an operation as high amputation before extirpation, which was done two weeks later, he thought with far less danger of infection than where the whole was removed by one operation. It was his practice to

tampon the vagina in three sections. He passed one strip of gauze so as to prevent contact of the peritoneum with the sloughing wound. A second strip was placed midway, and a third strip just within the vulva. The latter was changed daily, the middle strip was left several days in place, while the first was only removed at the end of a week.

DR. BYFORD had done total extirpation twenty-five times, with one death from delirium tremens. He did not scrape before the operation. He had had the uterus go to pieces under his fingers, had had the pelvis washed with septic matter, and yet his patients got well.

DR. T. A. EMMET preferred amputation. Dragging the uterus down will render this as well as other operations almost bloodless, steady traction putting the arteries on the stretch. He did not use either the cautery or caustics, but, after removing the diseased tissue with the scissors, sewed vaginal mucous membrane over the stump, leaving no surface to heal by granulation. His results had been satisfactory; he thought that with the scissors he could remove as much tissue as can be got out without puncturing the peritoneum. He had, however, no objection to extirpation. For sarcoma it certainly should be done. His longest case without recurrence had been fourteen years. An absence of recurrence for four or five years was not uncommon. He thought that the results were no better, nor perhaps as good, where the whole uterus was removed.

DR. BAKER closed the discussion. He agreed with Dr. Janvrin that where the body was deeply involved hysterectomy should be done. He had done eight hysterectomies, with eight recoveries. There had, therefore, been no added mortality in these cases. On the other hand, he agreed with Dr. Emmet that almost the whole uterus could be removed by high amputation, and he thought that statistics would be found, on the whole, in favor of this operation.

DR. HORACE T. HANKS, of New York, read a paper entitled

THE AVOIDANCE OF MURAL ABSCESES, SINUSES, AND VENTRAL
HERNIA AFTER LAPARATOMY.

Avoid sepsis. Shave the pubes twelve hours before operation. Apply an antiseptic dressing to the skin of the abdomen before the operation. Make a clean-cut wound. Avoid undue pressure from retractors. Do not use germicides too hot or too strong. Avoid unnecessary needle punctures. Do not tie the deeper sutures too tightly. Change the dressing on the second day. Do not use a drainage tube unless necessary; draw it up one-third at the end of twenty hours, and remove it on the third day unless there is a purulent dis-

charge. Leave one loose suture in the track of the tube, to be tied on its removal. Before cutting sutures apply an antiseptic dressing, being careful not to introduce septic material by their removal. The author had seen five cases of ventral hernia in three months, the operations having been done by four different surgeons, one only being his own. The cause was giving-way of the fascial planes. The layers of the abdominal wall should be separately brought into apposition.

DR. T. A. EMMET used wire sutures, shouldered and twisted, in preference to silk or catgut. With the silk suture the wall doubled on itself, and union was obtained between the peritoneum and the skin. This was the commonest cause of hernia.

DR. BYFORD had had some little trouble with mural abscess. He did not think that either this or ventral hernia could be altogether avoided. One cause not mentioned was dead material in the wound, such as bruised tissue and buried sutures. It was desirable to cut away all injured fat; and as to buried sutures, he had abandoned them. He considered the silkworm suture better than any other. He brought the parts together by a circular insertion of the sutures, the needle passing upward and downward, then inward and outward, so that the largest amount of included tissue was from the middle layer of the abdominal wall, and the greatest pressure was upon this part.

DR. WYLIE had taken up the question of ventral hernia after laparotomy six or eight years ago. It occurred more frequently after the removal of small tumors than after those of larger size. In the former case the cut fascia was more apt to retract, and the apposition of homologues was more apt to be defective. The fascia should be separately united. If the muscular fascia is secured you will have no hernia; if not, you may have hernia, no matter what variety of suture is used.

DR. CHADWICK suggested that it might be better to avoid the linea alba altogether, and to make the incision through the rectus muscle, where we could find tissues which were ready to unite. He did not think that wire gave any better apposition than other varieties of suture. He used the silkworm gut.

DR. HANKS closed the discussion. The proportion of ventral hernia after laparotomy was, in New York City, he thought one to ten. There was something wrong. It was a serious matter to remove a cyst which had occasioned but a few symptoms, and to replace it by such a disability.

DR. T. A. REAMY, of Cincinnati, read a paper entitled

SOME CLINICAL TESTIMONY AS TO THE RESULTS OF REMOVAL OF
THE UTERINE APPENDAGES.

The report included one hundred and sixty-four cases operated upon from 1885 to 1889. Pus was found only seventeen times. In three cases, after the removal of one ovary the women had borne children. As a rule, after the removal of both ovaries menstruation ceased. The effect was to diminish sexual desire in the majority and to increase it in a small proportion of cases. The author infers that the ovaries bear an important relation to menstruation; that precipitation of the menopause by their removal has an effect analogous to that of the normal menopause upon sexual appetite; that gonorrhea has a smaller causative influence in the production of pelvic disease than is generally ascribed to it; that while operation is satisfactory in properly selected cases, it is useless in the neurotic class, and that many other cases can be as much relieved by conservative treatment.

DR. JOSEPH TABER JOHNSON did not favor the removal of a single ovary. As a rule, a second operation was subsequently required. He referred to two cases in his own experience where the patients had returned at the end of a year and demanded the second operation. He had had a high degree of satisfaction from operations in cases of small bleeding fibroids. In every operation he had arrested the hemorrhage and the growth. Operations for nervous troubles were the least satisfactory. It was his practice to give such cases the widest kind of a berth, although he knew of cases in which operation had given brilliant results. The presence of pus was an undoubted indication. His experience in regard to the effect upon menstruation had been the same as that of Dr. Reamy, irregular bloody discharge being traceable to a uterine polypus or other condition. As to the question of unsexing the individual, he thought that this had already been done before the surgeon arrived. The surgeon only removed organs diseased, painful, and of no use.

DR. WYLIE stated that Dr. Reamy's results in hysteropilepsy had been better than his own; his results in checking menstruation had also been better. His operations amounted to four hundred. For the control of menstruation the removal of the whole of the ovarian tissue was of more importance than the removal of the whole of the tube. Where menstruation had recurred he had operated the second and the third time, and had found ovarian tissue in the stump after he had thought that the whole had been removed. The author's proportion of purulent cases was low. Seventy-five per cent of his own cases had presented pus or a pyogenic membrane with occlusion of the tubes.

DR. S. C. GORDON, of Portland, Me., referred to the fact that while Mr. Tait six years ago had dismissed the subject of neurotic cases, stating that he never touched them, during the past year he had operated upon such cases with good results. Even where we could not demonstrate disease by bimanual examination, operation was justified by menstrual exacerbations in this class of cases.

DR. COE referred to laparotomy for pain and hemorrhage. He had been interested in Dr. Baldy's statement in regard to the return of these cases in Philadelphia. The same thing was true of New York, most of the operations having been done for adherent tubes and ovaries and pyo-salpinx. The extent of the wounded surface makes secondary adhesions in these cases almost inevitable. While persistent menstruation was perhaps rare, persistent and even excessive hemorrhage is not infrequent.

DR. REAMY closed the discussion. In operating for bleeding fibroids he excluded tumors above the level of the umbilicus. In regard to the partial operation, he thought the extinction of a physiological capacity not a small matter, and that the possibility of maternity in even the sickly woman added to the sum of her happiness. The hemorrhages after operation could be referred, as Dr. Johnson had said, to pyo-pi or other causes. He did not find such hemorrhages retaining the physiological characters of menstruation.

DR. R. B. MAURY, of Memphis, read a paper entitled

INDICATIONS FOR LAPAROTOMY IN PUERPERAL PELVIC
INFLAMMATIONS.

He reported a case of puerperal sepsis, coming on after the repeated insertion of the hand into the uterine cavity, where with offensive lochia, temperature rising to $103\frac{1}{2}^{\circ}$ and a pulse of 140, he had had a tumor extending from the groin to the level of the umbilicus. He had made a median incision and cleaned out a cavity containing fecal pus. For ten days there had been a fecal discharge from the wound, but healing was accomplished at the end of five weeks, and at the end of three months only a small area of cicatricial induration showed the site of the inflammatory products. Operation was indicated in local suppurative peritonitis. In general septic peritonitis his own experience had been discouraging.

DR. SKENE had had no experience with laparotomy for post-partum septic conditions. Where we have a local inflammation and collection of pus, it was undoubtedly indicated. As had been stated, the subject was rather new, but one more than well worthy of consideration.

DR. WYLIE recommended washing out of the uterine cavity

to prevent the necessity for laparotomy in these cases. Where we cannot prevent the entrance of poison into the surrounding tissue and veins, the indications were to search out and open phlegmons within the peritoneum as well as outside of it. In a recent case exhibiting sepsis soon after labor, phlebitis had been present, running down the right leg. The temperature was 104° and the leg much swollen. He had cut down upon the affected veins and liberated pus, had opened the abdomen and pushed up the peritoneum covering the broad ligament, giving egress to a grumous fluid, and had left a drainage tube in the wound. The temperature had fallen and the swelling of the leg had subsided. In his only case of operation for acute general septic peritonitis after labor, the patient had died. As a rule, cases suitable for laparotomy were hopeless when first seen.

DR. GARRIGUES had done laparotomy in thirteen cases of general peritonitis, with seven recoveries. In one case of general puerperal peritonitis he had had a fatal result. In his own practice strict antiseptic precautions prevented the development of such cases.

DR. C. C. LEE, of New York, considered the paper under discussion a valuable landmark. He referred to two cases of local suppurative trouble in which he had operated, with recovery; the appendages were not removed. Rapid blunting of the nerve centres to pain was marked in these cases. In true septic peritonitis it was useless to open the abdomen. With absence of general septicemic symptoms, however, we might expect a good result.

DR. HANKS considered the subject one of vast importance. Where we have retained placenta we should remove it. Where we have a localized peritonitis with a collection of pus, we should, as Dr. Maury had said, cut down and liberate it. As to general peritonitis, he thought that where the patient was going to die any way, experimentation was justifiable, at least on the part of the younger men. With early interference he hoped that the next five years would show an advance in the treatment of even this class of cases.

DR. SKENE had understood that the discussion referred to acute septic peritonitis. With circumscribed peritonitis, the pus being in all probability walled in, laparotomy was not only justified but loudly called for.

DR. A. F. CURRIER, of New York, read a paper entitled

A STUDY OF THE REPRODUCTIVE FUNCTIONS IN AMERICAN INDIAN WOMEN.

Reports were submitted from twenty-eight Indian agencies and army posts. Puberty was, among the Southern tribes,

established in from twelve to thirteen years; among the Northern tribes as late as the seventeenth year. Menstruation lasted for from two to six days, and among the civilized Indians pain was not infrequent. The menopause occurred abruptly or required several years for its establishment, as among our own women; it rarely gave rise to any trouble. Polygamy was common, and virtue and chastity ignored. Infanticide and criminal abortion were not infrequent.

Spontaneous abortion rarely occurred. Parturition was easy, the kneeling posture being the favorite position. Delivery was in the open air, as a rule, and the woman's usual duties were not long interrupted. Puerperal disease was unknown, and malignant disease rare. There seemed to be the same amount of the minor pelvic diseases as among white women; venereal disease was common; excessive menstruation was practically unknown. Conception was frequent, but abortion and the excessive infantile mortality render families small.

THIRD DAY—MORNING SESSION.

A paper by PROFESSOR WINCKEL, of Muenchen, Germany, entitled

TREATMENT OF EXTRA-UTERINE PREGNANCY BY MORPHINE,
was read by DR. REEVE.

His experience taught him that it was not necessary to do laparotomy during the first few months of extra-uterine pregnancy, that the injection of morphia into the amniotic sac was easier and better. Both ovaries and tubes remained afterward, and even the contents of the tube might afterward become absorbed, so that the organ could perform its function. If the patient complained afterward of pain, laparotomy could then be performed. In the last nine months two cases had been cured by morphine injections into the amniotic sac. The patients had no pains nor aches afterward, one injection only was made, the tumor became smaller. This method especially recommended itself to the general practitioner unaccustomed to performing laparotomy. "More than one road leads to Rome."

DRS. REEVE, FRY, and REAMY expressed a preference for electricity where laparotomy was not to be resorted to. With DR. PARVIN, they regarded the testimony of Prof. Winckel in favor of morphine injections as worthy of the most serious consideration.

DR. CORNELIUS KOLLOCK, of Cheraw, S. C., read a paper entitled

PRIMARY OPERATION FOR LACERATED CERVIX UTERI.

Three cases were reported: CASE I., 27 years of age, two children and one miscarriage, general health good. Labor commenced at 10:30 A.M., October 19th, 1890. Thirty minutes later a child was delivered weighing eleven and a half pounds, the head unduly ossified. There was copious post-partum hemorrhage, and the author had been called as consultant. He had found the woman pulseless at the wrist, and examination had revealed the cervix lacerated to the vaginal junction. A quart of a hot solution of alum was injected against the cervix, the patient was placed in the left lateral position, and five silver-wire sutures brought the parts together and checked the hemorrhage. Operation was followed with a bichloride douche, 1 to 3,000. The sutures were removed upon the twelfth day. Union was perfect.

CASE II., 18 years, strong, muscular, general health good. The author was called for post-partum hemorrhage, referred to excessive rigidity of the os. The cervix was found bilaterally lacerated, upon the right side to the vaginal junction, not so high upon the left. Five sutures were inserted upon the right side, four upon the left. The sutures were removed upon the tenth day. In this case it was necessary to bring the uterus down a little. This was accomplished by gentle pressure above the symphysis and the aid of the dressing forceps.

CASE III., primipara, married seven years, menstruation painful, opium habit established to the extent of the consumption of twelve to fifteen grains per day. The os was found dilated to the size of a twenty-five-cent piece. Labor was completed in three hours; hemorrhage followed. In this case a rent extended upward and backward two inches, and the circular artery was ruptured. The artery was twisted and seven sutures inserted. These were removed upon the twelfth day. Recovery was perfect. It has been said that immediate sutures loosen and cannot be depended upon. Loosening of the sutures may also occur in the case of the secondary operation. In Cesarean section, too, we have uterine sutures passed through tissues in a high state of congestion, but this fact is not reckoned as an element of failure. The primary operation presents a number of advantages over the secondary operation, where cicatricial tissue must be removed, coaptation is difficult and healing slow. Primary operation upon the perineum is accepted, and yet is open to the same objections as primary operation upon the cervix.

DR. T. A. EMMET would not do a primary operation, except for hemorrhage. There was a certain amount of danger from infection, local peritonitis, and cellulitis, while if the parts were

kept clean Nature would in many cases repair the wound better than any man. The conditions at the outlet were different: there was retraction of the pelvic fascia, depriving the blood vessels of support. While immediate repair of the perineum was indicated, he would let the cervix alone for fear of doing more harm than good.

DR. COE referred to the fact that where we had rupture of the circular artery the tear had extended so deeply as to constitute a subperitoneal rupture of the uterus. We had a contused wound to deal with, and one bathed by an acrid fluid. Immediate suture was open to grave objections. We have not only the cervical tissues but the subperitoneal space opened, and there was danger of shutting up septic discharges in the base of the broad ligament. A large lump of ice to the cervix and counterpressure would often stop the hemorrhage in these cases.

DR. EMMET stated that hemorrhage in many cases could be controlled by pulling the cervix down, without sutures.

DR. DUDLEY thought that if the general practitioner learned to discriminate the case which did require suturing from the one that did not, primary closure of the cervix would to a considerable degree lessen the work of the specialist. By immediate union we avoided the cutting away of tissue and consequent deformity. Not only blood vessels but lymphatics were opened. Immediate repair should prevent the dangers of absorption. The possibility of infection from without should not weigh as an objection, as the surgeon's hands are supposed to be clean.

DR. KOLLOCK closed the discussion. He thought that the after-effects of cervical laceration, in the production of subinvolution and sterility, were sufficiently serious to warrant the operation which he advocated in all cases where the tear was large.

DR. EUGENE GEHRUNG, of St. Louis, read a paper entitled
PREVENTIVE OR CONSERVATIVE TREATMENT OF PELVIC TUMORS.

The author stated as a principle that where there was great resistance to development there was proportionately greater energy of growth; that with diminution of resistance the energy of growth diminished, and that with entire absence of resistance growth often became stationary. Small myomata were often stationary, increasing rapidly in size with compression, irritation, and interference with the circulation. Ovarian growths, as a rule, date from displacements or strangulation by adhesions. He referred to a case where he had had a displaced ovary the size of a hen's egg; had replaced it, and in two or three months the enlargement had disappeared.

In another case he had had a fibroid tumor filling the pelvis, with a retroflexed, incarcerated uterus. He had replaced the uterus, and the tumor floating among the intestines had given no further trouble, seeming to lose its vitality of growth.

DR. W. E. FORD, of Utica, N. Y., thought the paper most valuable. The avoidance of minor topics in favor of abdominal surgery had a bad general effect. He was very much opposed to operations by incompetent men. It had been his misfortune to hear of as many as one death a week from this cause, especially during the past year.

DR. CURRIER agreed, in the main, with Dr. Gehrung and Dr. Ford. If, however, Dr. Gehrung included in his conservative treatment the rupture of adhesions, he could state that manipulations for this purpose, from either the vagina or rectum, were not without serious danger. In his experience adhesions were either unimportant or impossible to relieve by the described treatment. To be ultra-conservative did often more damage than to open the abdomen and find out what the conditions were.

DR. GEHRUNG closed the discussion. He did not include all cases. He did believe, however, that the larger proportion of diseases of the ovaries and tubes may be treated on the conservative plan, and that, if supported so as to be free from pressure, many tumors would take care of themselves.

DR. EDWARD REYNOLDS, of Boston, read a paper entitled

MECHANICS OF LACERATION OF THE PERINEUM,

his conclusions being drawn from one thousand deliveries during five years. His view is that, when the head is forced through the pelvis with a degree of speed which is too great for the elasticity of the vagina, and consequently produces an intravaginal tear, the point of separation is likely to be that at which the strong lateral portions of the superior fascia are attached to the lateral edges of the vagina; this union of three bands of different tensile strength determining the situation of the two longitudinal rents. The crescentic transverse tear which unites the lower extremities of the longitudinal lacerations is accounted for in the following manner: Owing to the obliquity between the superior layer of the pelvic support and the axis of the vagina, the posterior edge of the vaginal opening in this fascia is carried downward and forward as the head traverses the curved pelvic canal, while its anterior edge is raised and compressed against the pubes, so that the posterior half of the fascia is put upon the stretch, while its anterior portion is relaxed. The action of this upper layer as a whole may be summarized as that of its posterior portion, which resists the downward

and forward motion of the perineal body and fourchette. The inferior layer is strengthened in its anterior part by the superficial fascia, which is stated by Savage to be a somewhat firm, fibrous sheet, which is especially strong where it is reflected from the transverse muscles. The posterior half is composed of little but skin, sphincter ani muscle, and perirectal fat; so that the action of this lower layer is essentially but little modified from that of its anterior half. The efficient posterior half of the superior fascia is joined to the efficient anterior half of the superficial layer only by the small amount of indifferent connective tissue which binds them together in the perineal body. This attachment furnishes a weak line of cleavage which runs transversely between the inferior ends of the longitudinal tear. When such a separation has occurred, the edge of the superior fascia retracts and is no longer of importance. The head is then restrained only by a thin hood of superficial tissues, which parts along the median line in accordance with the classical explanation given by Savage. Those tears in which the transverse element is most strongly marked have seemed to me to follow prolonged second stages; those in which the longitudinal element is most developed have been generally the result of very rapid labors with powerful expulsive forces. I have had prepared a number of large diagrams, illustrating the lines in which the mechanical action of the various layers comes into play, and a set of diagrammatic views of the more common varieties of laceration, which were drawn from life, some of which exhibit well the form of laceration which, after the muscular retraction of the tissues sets in, bears an extremely close resemblance to the classical longitudinal laceration in the median line—which last tear I have of late years failed to find.

DR. CLEMENT CLEVELAND read a paper entitled

LAPARATOMY IN TRENDLENBURG'S POSTURE,

with exhibition of a new operating table.

In this posture the weight of the body is supported by the shoulders, the abdominal muscles are relaxed, and the intestines drop toward the diaphragm, leaving the whole field in view. Chloroform is the safest anesthetic. His table was almost entirely of iron and was adapted for ordinary office purposes as well as for operative use.

DR. GOODELL had recently seen operations in this position in Berlin; he had been struck with the advantages of the posture. He thought that ether ought not to be used, as it tends to congest the brain, which is already, in this position, low. Chloroform was to be preferred. The posture was especially applicable to cases of adherent tubes and ovaries. For

large tumors he would prefer the ordinary position upon the back.

DR. SUTTON had since May possessed an Edebohls table. He used chloroform exclusively.

DR. EDEBOHLS had recognized the advantages of elevating the pelvis, and had used the posture since 1889, adding various devices to his old operating table, having modified Trendelenburg's laparotomy table during the past year.

DR. CLEVELAND did not mean to give the impression that the posture was used in all laparatomies. He preferred to irrigate, too, in the horizontal position.

DR. GEORGE KEITH, of Brooklyn, read a paper entitled

THE ELECTRICAL TREATMENT OF UTERINE FIBROIDS IN ENGLAND.

The treatment of fibroid tumors of the uterus comprises treatment by electricity, hysterectomy, and the removal of the ovaries. Electricity is capable of bringing about cure in the vast majority of cases. Treatment requires about three months. The mechanism of cure is by reduction of the arterial blood supply and starvation of the tumor. Where pain and hemorrhage are prominent, the positive pole is placed inside of the uterus; where size is the main indication, the negative pole is applied internally. The frequency of applications varies between every second day to once a week. The current strength is that which can be borne without discomfort, being, as a rule, ten to fifteen milliampères. The duration of the application is from five to ten minutes, and the average number of applications thirty. Ultimate results are not obtained until three months after the cessation of treatment.

DR. FORD had during the past year followed up cases treated during the past six or seven years, and had found that a large number of small fibroids had been cured. Very large tumors, extending above the umbilicus and touching the ribs, diminish in size and do not regrow. In these very large tumors galvanism promises more than hysterectomy. In one case, measuring fifty-seven inches in circumference, he had had recession of twelve to fourteen inches, and the woman was able to earn her living as a housemaid. She went to New York, was operated upon, and died. Smaller fibroids which can be safely removed by hysterectomy can be still more safely treated by galvanism. He had his patients in a hospital and made his applications every three or four days. He wanted to repeat a statement made last year. The electrolysis in these cases demands volume rather than tension in the current.

DR. SUTTON stated that hysterectomy was, as a rule, more

often successful in the cases of large tumor than where the tumor was small. The large tumor gave a large, satisfactory pedicle; it was impossible to get a good pedicle without a large uterus. As to treatment by electricity, he doubted the cures; he had seen tumors, too, containing pus and myxomatous fluid, where electricity must do harm.

DR. BAKER wanted to put upon record that electricity had been a success, not a failure, in his hands. It had given satisfactory results in nineteen out of twenty cases; in the twentieth, hysterectomy would be required.

DR. DUDLEY referred to Dr. Apostoli, who does not use electricity for fibro-cysts, but sends these at once to the surgeon. He does not claim cures, either, in the sense of disappearance of the tumor, but in the sense of relieving symptoms and making the patient comfortable. In a case where the tumor was so large as to press the ribs out of shape and where hemorrhage threatened life, the patient had been treated four years ago, had been relieved, and this summer had presented herself only for a slight return of pain. He would say that the man who tries to knock Dr. Apostoli down has a difficult thing to do; he is an expert in diagnosis as well as in his treatment of these cases.

DR. SKENE stated that the death rate from hysterectomy for fibroids was, in New York and Brooklyn, greater than that from all other modes of treatment combined.

DR. KEITH closed the discussion. He thought that Dr. Sutton's criticism on the electrical treatment was unfair.

DR. HENRY D. FRY read a paper entitled

DIABETES MELLITUS GRAVIDARUM.

All nursing and lying-in women present glycosuria. Physiological diabetes is not, however, to be confounded with diabetes gravidarum. Judging by literature, this condition is rare. It is probably not so uncommon as unrecognized. It is a good rule to suspect diabetes where we have death of the fetus without apparent cause. Trouble with vision in several reported cases led to the diagnosis. The death of the fetus generally occurs in the seventh month, although delivery may not take place for one or two months later.

Mild cases of diabetes assume an acute form, and acute cases proceed rapidly to a fatal termination. The obstetrical treatment consists in the production of premature labor. In the milder types interference may not be required. In the more serious cases the mother emaciates rapidly, and labor should be induced at the earliest period of viability.

TRANSACTIONS OF THE FOURTH ANNUAL
MEETING OF THE AMERICAN ASSO-
CIATION OF OBSTETRICIANS
AND GYNECOLOGISTS.

HELD IN NEW YORK CITY, SEPTEMBER 17TH, 18TH, AND
19TH, 1891, AT THE ACADEMY OF MEDICINE.

(Abstract.)

FIRST DAY—MORNING SESSION.

The President, DR. A. H. WRIGHT, of Toronto, in the Chair.

An address of welcome was delivered by DR. ROBERT T. MORRIS, of New York, and the response was made by DR. GEORGE H. ROHÉ, Vice-President, of Baltimore.

DR. AUG. P. CLARKE, of Cambridge, Mass., read an essay on

POST-PARTUM HEMORRHAGE—ITS ETIOLOGY AND MANAGEMENT.

After an exhaustive and scholarly review of the conditions leading to post-partum bleeding, including uterine atony and hour-glass contraction, disproportionate growth of the uterine vessels, ectasis of the fundal vessels, uterine edema, placental abnormalities, fibroma or other morbid growths, lacerations of uterus, vagina, or vulva, etc., he discussed the treatment. Anesthesia is of incalculable benefit in lessening many of the dangers incident to parturition, being particularly useful in cases of uterine inertia dependent on the exhaustion of the system generally. In cases of advanced or serious renal affections, chloroform may be the safer of the two anesthetics. Pressure or support over the fundal uterine segment as the child recedes from it will aid in keeping up continuous or regular uterine contraction, and thus lessen the risks of the occurrence of severe hemorrhages. The administration of ergotin or ergotin in will assist in re-establishing normal contraction. When used hypodermically its physiological and therapeutical action is often speedily and permanently manifested. It is in the milder class of cases that its use will be of the most material service. In cases in which hemorrhage is profuse intra-uterine injections will be of great

advantage. In women of full or plethoric habit cold water may be employed; in those who suffer from nervous affections water from 115° F. to 125° F. is to be preferred. Doubtless when hemorrhage is arrested by hot water it is owing to the formation of thrombi more or less extended into the vascular tissues. The employment of cold has a reflex action—it gives a toning effect to all the tissues, it facilitates the constriction of the muscular coat of the dilated vessels. Caffeine used hypodermically is of benefit. The application of some form of electricity will aid in some measure in promoting contraction of the uterine muscular fibres. In cases in which hemorrhage is anticipated, the early administration of quinine may in large measure serve to keep the hemorrhage under control. The occurrence of certain pains may lead us to anticipate post-partum hemorrhage. If the pains are acute and brisk, with abrupt endings, and followed by unusually long pauses, we may infer that there is a deficiency of nerve force. This may result in atony of the muscular structures and in failure to effect constriction of the uterus and closure of the utero-placental vessels. In cases in which hemorrhage proceeds from the lower section of the uterus or from the upper portion of the cervix, the application of iodoform wool and gauze and of styptics or of iodine will be of service. The author has great confidence in the employment of nitrite of amyl; it is an arterial and cardiac stimulant of the most extraordinary power. The employment of intravenous injections, and the dangers attending their use, are matters for determination in each individual case. The employment of alcoholic saline intravenous injections for their dynamic or tension effect will be most beneficial. The author's later experience favors the adoption of the method of hypodermic injection or transfusion of spirituous saline solutions. This method is more convenient, is safer, and is more likely to be followed with favorable results. Other methods for controlling hemorrhage and for preventing collapse are referred to. Compression of the abdominal aorta should sometimes be tried. This may, in some measure, enable the medical attendant to get control over the hemorrhage when all other means have failed. This procedure has been approved by such great authorities as Barnes, Churchill, and Simpson.

DR. ROBERT T. MORRIS, of New York, read a paper on

A NEW METHOD OF PALPATING THE KIDNEY.

DR. W. J. ASDALE, of Pittsburg, read a paper on

REMOVAL OF THE KIDNEY IN DISEASE, WITH CASES.

Before reliable conclusions and methods can be estab-

lished, and this most formidable surgical procedure can be made safe, if ever, a familiar acquaintance with all that has been done in the sphere of renal surgery must be secured and the details of a considerable number of cases must be carefully studied, that questions of both physiological and pathological import may be determined. Any contribution, although stating no new facts, may be of present value by corroboration and emphasis of points previously taken.

The following points were accentuated by the histories of a number of cases and operations:

First, in respect to the symptomatology of malignant disease. It is often insidious in its attack; pain may be absent or insignificant in amount. Early copious hemorrhages, without any marked previous manifestations of concern, are most suggestive of structural change of malign character.

Second, in regard to method of operation. The choice will be governed not more by preference than by necessity. We are reminded, however, of the facility of approach by the lateral abdominal method of incision, and of the ease with which large solid growths may be taken from the renal site. Again, in all cases it is of primal importance to possess the advantage of direct palpation of the other kidney before nephrectomy; this manœuvre the operation by primary anterior incision makes easy.

The antero-lateral incision provides the minimum of injury to the peritoneum and the strongest assurance that soiling of the peritoneal surfaces will be avoided. Drainage, the importance of which cannot be overestimated, can be most efficiently applied after the lateral abdominal operation. Shock, even to the aged and feeble, does not of necessity inure to forbid a carefully conducted operation for removal of the kidney. Finally, the importance of early diagnosis and the futility of late operations, in malignant disease especially, are clear.

DR. A. VANDER VEER, of Albany.—We owe Dr. Asdale our thanks and gratitude for his thorough and candid manner of reporting his cases; there was a fatality present that no operator can avoid—that is, an advanced condition of disease. Malignant disease of itself is always a dangerous condition for us to attack, and when advanced, as in these two cases, we have heavy odds against us. The consensus of opinion is that chloroform is the safest anesthetic to use in surgical kidney. In malignant disease let us operate early—as early as possible.

DR. C. A. L. REED, of Cincinnati.—The question of the treatment of the pedicle in nephrectomy will remain a serious one as long as we have kidneys to remove. We all

recognize the treacherous friability of the renal vein. To avoid the unhappy and almost necessarily fatal accident of cutting it by a tight ligature, he had put around this vessel the protecting influence of its neighboring structures, and had ligated the pedicle in one mass. He endeavored, in effecting the division, to leave something of a button to make the ligature secure. So far he had not been embarrassed with secondary hemorrhage. The amount of force that is required to control hemorrhage from the renal artery need not be so great as to cut the walls of the neighboring vein, providing we have left a sufficient button to prevent slipping of the pedicle under the very considerable circulatory pressure which is brought to bear upon it through the few hours immediately succeeding the operation. Unless there be surgical conditions of the ureter itself demanding special treatment, there is no need of treating it otherwise than you would the circulatory vessels.

DR. KELLOGG, of Battle Creek, Mich.—The question which should be raised in this discussion is whether it is better to remove the kidney, or whether it is better to perform the operation of nephrotomy. If we drain the kidney in case of suppurating kidney and in case of malignant disease of the kidney, the patient will likely recover. Mr. Tait never removes the kidney. If any operation at all was considered desirable, he performed the operation of nephrotomy through the lumbar region and drained the kidney. K. made it a practice to examine the position of the kidneys and all abdominal organs in every case of pelvic disease of women. In a very large proportion of cases the right kidney especially is prolapsed and movable. In thirty per cent of all cases in which there is displacement of the pelvic organs there is also displacement of the kidneys. His method has been to first examine the patient on the back, the shoulders elevated, and legs flexed forward so as to relax the abdominal muscles as much as possible; placing one hand at the back and the other hand in front. In case he fails, he has the patient rise on the feet and rest against the end of the table; then, on bending forward, the abdominal muscles are completely relaxed, the kidney is dragged down, and when the patient takes a deep breath it is easy to seize it, if it is at all prolapsed.

DR. J. H. CARSTENS, of Detroit.—I am much interested in the diagnostic points made. In all diseases of the kidney there is great danger in using ether. In all cases it is advisable to use chloroform. Looking back upon cases which have died within twenty-four to forty-eight hours, reported dead from shock, I am confident now that they died from the

ether. Even chloroform will produce congestion of the kidney, but not to the extent ether does.

DR. HENRY T. MACHELL, of Toronto, asked for points which would enable us to recognize the kidney after the abdomen is opened. He had seen in more than one instance a considerable loss of time in recognizing and determining what was or what was not the kidney.

DR. MORRIS, of New York, said that as to the question of how we can determine whether we have kidney or some other organ, he had only once been in the position where he could not tell from the character of the capsule and the tissue of the organ whether he had kidney, liver, some morbid growth, or some other organ. In that case he had colloid carcinoma; he found the aorta, then the renal artery and traced that, and determined from the relative position of the renal artery that the kidney was beneath this mass.

DR. L. S. McMURTRY, of Louisville, read a paper on

INTRA-UTERINE IRRIGATION AFTER LABOR.¹

DR. W. W. POTTER, of Buffalo.—The distinguished Fellow from Kentucky sounded the keynote of this whole question of intra-uterine irrigation after labor when he said that the time for commencement of the treatment was at the time when it became essential—that is, at the initial symptoms of infection. If we could only always determine when that initial symptom presented, I have no doubt that this method would result in the saving of life and in the prevention of prolonged sickness. There are ways in which infection gets to the vital organism insidiously, and we only know that by watching the symptoms which it produces; hence the importance attaching to the puerperal woman in her attendant paying more attention to a labor—not treating it lightly, not going to it and hurrying away in a few minutes after delivery, and saying, “I will come back when you need me,” but she is to be watched with all care, even after simple labor, for a few days, until all danger of that initial symptom has passed away. It is important to emphasize all that, for the obstetricians of to-day must certainly recognize the fact that they are occupying a more responsible place than ever. There is more light upon the subject than formerly.

DR. E. E. MONTGOMERY, of Philadelphia.—This subject is one of vital interest, for upon the meeting and subduing of the germs at an early stage is dependent the future comfort, health, and possibly life of the individual. He fully indorsed

¹ See original article, page 1206.

what was said as to the importance of early intra-uterine irrigation where there is the least indication of septic infection. We have in the cavity of the uterus a large absorbing surface; a surface that is covered with *débris*, a surface in which, through the heat of the body and the character of the secretions, germs multiply with great rapidity, are readily taken up and carried through the vessels, carried by the continuous action of the mucous membrane into the tubes, and we have secondary infection not only of the tubes and ovaries, but we have systemic infection through the absorption into the system. It is important to early render this surface sterile and prevent the development of the disease. In such cases he would advocate, in addition to irrigation, the use of the curette, the scraping away and removal of the infected *débris*, and, after irrigation with a chemical solution, the introduction of a twist of gauze to the fundus, and in this way make sure that the subsequent drainage was perfect and complete.

DR. GEO. H. ROHÉ, of Baltimore.—It is my conviction, based upon observation and some personal experience, that the practitioner who is in doubt about antisepticism in obstetrics will lose nearly as many patients from septic troubles as one who misbelieves in that method. If there is any one thing necessary in practising aseptic obstetrics, it is a firm belief that it is absolutely necessary in every case. Consequently it has been well said that the time to begin treating sepsis in a lying-in woman is before she is septic. But even after the septic condition has been established a thorough carrying out of the aseptic practice will result in success in a large majority of cases. Any one who has ever seen the interior of the uterus of a woman who has died of septic infection after delivery will appreciate the importance of more than superficial measures—not merely an injection now and then, even thoroughly made, but also the use of some chemical disinfectant which will inhibit the rapid multiplication of the germs.

DR. J. H. CARSTENS, of Detroit.—It has been pretty well settled that normal cases had better be let alone; but where symptoms develop it is well to start irrigation very early. There are cases where the temperature rises up to 103° or 104° or 105° , where the irrigation has no effect at all, even if you irrigate every three hours, or two hours, or every hour. There is no *débris* there, nothing wrong with the uterus, the physician or midwife who attended the wound was aseptic, and still that woman has puerperal fever. These are cases of auto-infection. We know that when women have a latent disease of the tubes, be it tubercular, gonorrheal, or an ordinary pyosalpinx, the act of parturition will cause it to break out in full

force or will cause a rupture of the tube, which will allow pus to run down into the uterus and there set up a violent septic poisoning. These are the cases which need laparotomy. We ought to have it before our minds that there are cases which are due to a poison being introduced from without, by the physician or nurse, and there are other cases where the cause is within the patient and may have been lying latent for years, simply needing something to cause the explosion.

DR. CUSHING, of Boston, in confirmation of what the last speaker said, reported a case that apparently sprang from tubal infection.

DR. A. H. WRIGHT, of Toronto.—I indorse the statements expressed in the paper. The subject is of the utmost importance. Nothing in the art of obstetrics has given me more anxious thought than this question of antiseptis. It is my practice in the lying-in hospital and in private practice to use intra-uterine irrigation very seldom. In itself it is an evil, capable of doing a certain amount of harm. When the necessity arises I certainly do not scruple at once to go on with irrigation in the interior of the uterus. As far as I have seen irrigation carried on by general practitioners, I have been sometimes rather horrified at the miserably careless and indifferent way in which it was done. It is one of the most difficult things to teach hospital students how to do this properly.

DR. J. F. W. ROSS, of Toronto.—I do not think ordinary water used as an injection is as good as some antiseptic solution. My experience with intra-uterine irrigation has not been as favorable as I could wish. Two cases of puerperal septic trouble coming under my notice within the last two years have been treated by packing the uterine cavity with iodoform gauze through a speculum, and in this way attempting to subdue the formation of the poisonous ptomaines in the cavity.

DR. KELLOGG, of Battle Creek, said there was another use for irrigation which had not been mentioned. In a case in which the temperature rose to $104\frac{1}{2}^{\circ}$ irrigation was employed, but did no good. By the application of a hot douche, 140° , the uterus was made to contract. The next morning the temperature was normal, and did not rise again. His plan of using the douche is to introduce a large drainage tube, then a small catheter through the drainage tube, and then to use water at a temperature of 130° . Lower temperature is often the reason for failure. Warm water relaxes, hot water contracts. Very hot water is efficient as a germicide. The uterus will bear a still higher temperature.

DR. McMURTRY, closing the discussion.—I feel very grateful to the Fellows for the very cordial manner in which they

have received the suggestions I intended to convey. The purpose of the paper was not to discuss the routine use of intra-uterine irrigation after labor, or to deal with the prophylaxis of puerperal sepsis, but simply to emphasize the point that this very valuable method, which we can institute in the very initial stages of sepsis, is not generally appreciated by the great body of the profession; that the golden moment when it can be most efficient is lost by the administration of a hypodermic dose of morphia, under the mistaken idea that the initial stage of sepsis is a little milk fever or malaria, or some little disturbance brought on by the process of labor. Dr. Carstens, of Detroit, has alluded to a class of cases which should not be considered in connection with this treatment at all—that is, to the fulminating cases, cases of sapremia, where in a few hours the system is thoroughly saturated with the poison; cases that nothing in the world can resist. Even in the initial stages of these cases this treatment can do no harm. The cases alluded to by Dr. Cushing are scarcely within the scope of the discussion. There is no such thing as auto-infection of a woman after labor. Cases of tubal disease belong to that class where the disease was present before labor began. They may have been mechanically affected by the process of labor and the muscular contractions, so as to complicate the case. They are complications of the puerperal condition. Moreover, the treatment of those cases by laparotomy, evacuation, removal of the disintegrating structures, drainage, and irrigation is but an application from above of the same principle of treatment.

FIRST DAY—AFTERNOON SESSION.

DR. LLEWELLYN ELIOT, of Washington, D. C., read a paper,

IS A CHILD VIABLE AT SIX AND A HALF MONTHS?

He referred to the French law, which excludes the possibility of the viability of a child born before the sixth month (one hundred and eighty days), as unjust, since cases have occurred where children born before that time have been reared and lived for many years. He denied the plea of superfetation, in these cases, as untenable. A table comprising cases in which the period of utero-gestation extended from the fourth month (one hundred and twenty days) to the termination of the seventh month supplements the paper. Dr. Eliot related the histories of three cases of early viability, one at six months and eleven days, one at seven months and one day, and one

at seven and a half months, and drew the following conclusions: 1. A child under peculiar circumstances of development is viable at four months. 2. A child is viable at six and a half months. 3. The moral character of the parents has nothing to do with the birth of a premature child, when considered from a standpoint of constitutional development. 4. Obstetricians should strive to convince jurists of these facts.

DR. J. H. CARSTENS, of Detroit.—The paper of Dr. Eliot is one of great importance from a medico-legal standpoint. I would hesitate to say that a child was five and a half or six months, or six and a half months. I do not see how it is possible for us to say how long a child has been in utero. A woman may have a discharge of blood similar to menstruation when she is already pregnant for a month. In the present state of our knowledge it is clearly impossible to say how old that child is, unless you have two absolute factors: that you have the woman menstruate at a certain date, and that coition was had only at one certain date. You cannot even judge from the time the woman feels life, because that varies.

DR. ELIOT, of Washington, D. C., closing the discussion, said that in using the incubator it was necessary to regulate the amount of moisture as well as heat. If we have it too dry, we kill the child; if we have it too hot, we kill the child.

DR. E. E. MONTGOMERY, of Philadelphia, read a paper on
THE APPLICATION OF SACRAL RESECTION TO GYNECOLOGICAL
WORK,

in which he advocated the procedure in all cases in which uterus and rectum were both involved with malignant disease, and in cases of uterine cancer where the uterus was enlarged or where the vagina was small and the case complicated by disease of tubes and ovaries, causing extensive adhesions.

He places the patient upon the left side or semi-prone position, and makes a bow-shaped incision from the right sacroiliac synchondrosis across the median line to a little beyond the apex of the coccyx, enucleates the latter bone, separates ligaments and muscles from the right side of the sacrum, and, beginning just below the third posterior sacral foramen, cuts off with chain saw or bone pliers the right ala of the sacrum.

In operations for removal of the uterus and its appendages, the rectum is pushed to the left and the peritoneum opened. This brings the operator upon the posterior surface of the uterus, when the broad ligaments may be seized by hemostats, raised up, the broad ligaments ligated, and the uterus removed.

After removal of the organ the peritoneal surfaces may be stitched over the vagina and the posterior peritoneal opening also closed. He does not prefer it to vaginal hysterectomy where conditions are favorable for the latter. He reported two cases in which he had done the operation. One for cancer of the rectum and uterus, in which three inches of the rectum and the uterus and appendages were removed and the calibre of the gut restored. A large collection of feces pushed up the lower segment of the rectum, requiring the wound to be reopened and a secondary operation four weeks later. The second operation was done for cancer of the uterus complicated by tubal and ovarian disease with adhesions. Both patients recovered, and no inconvenience in locomotion was experienced.

DR. C. A. L. REED, of Cincinnati.—This operation attracted my attention when the first publication of it appeared. Like many of the other operations, particularly those that involve the invasion of structures that we have not been in the habit of treating surgically, it appears to be more formidable than perhaps it really is. In an effort to treat malignant disease involving the middle segment of the rectum, this operation would be demanded and would be justifiable, for we are justified, perhaps, in doing almost anything for the relief of malignant cases, particularly those involving important tissues, such as the rectum and uterus; but if we can bring the maximum of relief with the minimum of risk, that is the line we ought to follow. There is one question which cannot be answered as yet from any ascertained results, and that is with reference to the remote influence of this operation. The removal of the coccyx and the removal of the lower segments of the sacrum must of necessity deprive the lower portion of the pelvis of an important basis of support; and what is the condition of our patients with regard to the support of the superimposed viscera following the operation, after a considerable length of time? Dr. Montgomery's cases are yet too recent to afford an answer to this question. While the primary results have been very good, it would have been vastly better to have relieved his patient by primary colotomy; but if this operation will bring the same amount of relief with as little risk of primary mortality, and at the same time insure the patient voluntary control of her fecal discharge, by all manner of means let us encourage it.

DR. H. O. MARCY, of Boston.—We ought to lay emphasis upon primary colotomy. I mention it simply because I lost two patients where the result might have been entirely different if I had done colotomy first. This was in cancer of the rectum. When we recollect that the intestine is very fully

distended with gases and feces, the pressure upon our sutures is something enormous. Primary colotomy gives us that all-important factor of surgical rest of the tissues with a far better promise of success.

DR. H. T. HANKS, of New York, thought that this operation could be recommended in most cases of chronic pelvic abscess where a rupture has taken place into either the vagina or rectum, and where the tissue underneath the broad ligament is honeycombed. He was interested from the fact that he had had one or two cases where he probably would have succeeded better by doing this operation. It is a difficult matter to cut through the abdominal wall into the true pelvis and find out the exact condition. Though we very quickly get a view of the parts, we cannot manipulate easily.

DR. W. H. WATHEN, of Louisville, congratulated Dr. Montgomery upon his courage, his tact, and his excellent technique.

DR. A. VANDER VEER, of Albany.—I would not be willing to abandon vaginal hysterectomy for removal of the uterus and ovaries. The technique of vaginal hysterectomy is so perfect it is one of the most brilliant operations we have to perform at the present time, and the results are satisfactory. In regard to colotomy, I never had a patient who was thoroughly satisfied with the result of the operation. All were dissatisfied with the fecal discharge. But in the five or six cases in which I have operated for the removal of the lower segment of the rectum, it mattered not if there was some leakage, some trouble in keeping a pad there and receiving the feces; they always said, "Doctor, it comes out at the right place. It feels more natural."

DR. AP MORGAN VANCE, of Louisville.—The performance of primary colotomy would bring about a difficulty from the fact that a good deal of the gut was to be removed; and if there is cancer there the more removed the better. If it was tied, anchored, at the point of ordinary colotomy, we would have difficulty in bringing it down to get approximation.

DR. J. F. W. ROSS, of Toronto, read a paper entitled

HOW SHOULD WE PROCEED WHEN ABDOMINAL TUMORS ARE
COMPLICATED BY PREGNANCY?

He emphasized the point that there was nothing of malpractice in the opening of an abdomen during the existence of a concealed pregnancy, before proceeding to discuss cases in which pregnancy had been recognized. Cases of ovarian tumor and fibroid tumor of the uterus were reported, and a request was made for reports from members of the Association, so that a foundation might be laid on which to build up

a few fixed rules for future guidance. Ovarian and myomatous tumors were the only two forms taken into consideration.

Ovarian Tumors.—He said that the methods of treatment to be discussed were :

1. To allow the pregnancy to go to full term, or until the uterus throws off its product.
2. Puncture of the cyst until delivery is completed.
3. Induction of premature labor.
4. Ovariectomy—the uterus left to abort or go to term.
5. Ovariectomy—the uterus emptied of its contents by incision.
6. Ovariectomy and abdominal hysterectomy.

The author advocated early ovariectomy, but supported cyst puncture in certain favorable cases, if the patients objected to other operation or wished to have a living child. If at any time bad symptoms arose, he insisted on immediate abdominal section.

In advanced cases, where injury or much handling of the uterus is unavoidable, the organ should be emptied to forestall the almost inevitable abortion or premature labor.

Myomatous Tumors.—1. Induction of premature labor.

2. Early myotomy or abdominal hysterectomy.
3. Late hysterectomy or Cesarean section.

4. Tentative measures, as :

- (a) Enucleation of cervical tumor to permit labor completion.
- (b) Enucleation of a sloughing tumor following labor.
- (c) Abdominal hysterectomy for a sloughing tumor or uncontrollable hemorrhage following labor.
- (d) Abdominal hysterectomy for septic infection from retention of discharges in the non-contractile uterus.
- (e) Abdominal hysterectomy or Cesarean section to end a labor that will require long forceps, version, or craniotomy.

He finally concluded that the tentative measures were the best.

DR. H. T. HANKS, of New York.—I have been interested for many years in the subject of uterine and ovarian tumors. We not only want to consider the patient but the surroundings, and when you know that you have got a unilocular cyst, that you can tap and remove the fluid and the patient can go on to term, or at least to eight and a half months, you are justified in doing it. But if the pregnancy is complicated with fibroid tumors the case is different. They grow very rapidly from the first month up to the fifth or sixth month, but do not from the seventh to the ninth month. If the

tumor is situated in the cervix you should enucleate it, because you cannot deliver through a cervix of which two-thirds is a fibroid. If you cannot do that you are justified in producing premature labor or an abortion at the second or third month. If the tumor is the size of your fist, and you can push the cervix above the brim, and you have two-thirds of the cervical tissue healthy, you are justified in delaying. If the tumor is above the middle zone the child can be delivered quite easily at term.

DR. A. VANDER VEER, of Albany.—The difficulty of diagnosis in a case of fibroid of the uterus or ovarian tumor is one of the problems of surgery. The subject is being handled with much greater clearness and more satisfaction, but it is essential to make a diagnosis, and in making the diagnosis we have very little that helps us in the history given by the patient. A condition which Dr. Ross did not touch upon is this, that in most cases where a patient who has a uterine fibroid becomes pregnant the tumor will take on a certain amount of growth, more in some cases than others. Occasionally it undergoes a sarcomatous change. Again, a patient may have a fibroid, go through pregnancy and a safe delivery, after which the fibroid will disappear. The medico-legal point of this question has been touched upon by two or three of the decisions that have occurred in court. We should be thoroughly united and thorough in our emphasis that in these cases the fibroid does sometimes disappear under the influence of pregnancy. In the treatment of ovarian tumors coincident with pregnancy, we should tap and carry the patient along as near as possible to the full time.

DR. I. H. CAMERON, of Toronto.—I am strongly in accord with the opinions expressed that no general rules can be laid down for our guidance in any case. Every case, as Dr. Hanks has said, must be treated on its own merits. A sharp distinction should be made between tumors involving the uterus and those involving the ovaries. As has been said, the position of the fibroid tumor makes all the difference in the world. If it be clear that from the position of the tumor it will not interfere with delivery, it may be laid down as a general rule that it should not be touched before gestation is complete. Of course there may be risks of inflammation or malignant disintegration. I would like to enter my protest against tapping a unilocular cyst as a palliative measure. Twice in the last week I have had occasion to witness the very great danger of tapping.

DR. H. O. MARCY, of Boston, said that he agreed with Dr. Cameron. He supposed tapping under these circumstances was out of the question. He reported a case showing its danger.

DR. W. W. POTTER, of Buffalo, reported a case of successful operation for removal of a tumor during pregnancy.

DR. H. O. MARCY, of Boston, asked what was the condition of the veins.

DR. POTTER replied that they were highly congested. He believed that it was a case where tapping would have been very bad practice. His experience and that of others led him to believe that tapping should never be employed; if anything was done it should be through an incision.

DR. J. H. CARSTENS, of Detroit.—I am inclined to think that because of the peculiar blood changes union takes place better during pregnancy than at any other time. I wish emphatically to protest against the tapping of tumors during pregnancy. Cases of ovarian tumor, no matter what kind they might be, occurring during pregnancy, ought to be operated upon. In case of fibroid you have to judge of each individual case yourself.

DR. A. VANDER VEER, of Albany, said he did not suppose there was any man in the State of New York who had in his teachings emphasized more this point in reference to tapping in the case of an ovarian tumor than he.

(To be continued.)

TRANSACTIONS OF THE GERMAN GYNECOLOGICAL SOCIETY.

Fourth Meeting, held at Bonn.

[Continued from page 1004.]

SCHATZ (Rostock) read a paper on

INTRA-ABDOMINAL PRESSURE AND WANDERING ABDOMINAL ORGANS.

Practically the subject of intra-abdominal pressure has found some though not adequate appreciation in nearly all medical systems; but theoretically it has hardly received any consideration. The main reason for this is that the conditions here are not so simple as is the case with the intra-thoracic pressure, and particularly because the great variation in the

intra-abdominal pressure, which theoretically makes instruction more difficult, is all the more effective in its practical application. In this instance the author only intends to awaken the interest of gynecologists in these relations, because they have most to do with them.

Among the wandering abdominal organs he includes not only kidneys and spleen, but all organs situated in the dome of the diaphragm, hence also the liver and stomach.

The reason why the organs in the dome of the diaphragm leave their place in many cases is that the dome under certain circumstances becomes much smaller, thus crowding out a portion of its contents. It varies with the individual as to which of these organs is first or chiefly affected; most commonly it is the liver with its constricted lobe, the cause of which is often misinterpreted; almost as often it is the stomach, the troubles of which are but too often without sufficient reason ascribed to the right wandering kidney. Narrowing of the dome of the diaphragm results from lessening of the abdominal contents, whether by large portions of the intestines entering into herniæ, or a pendulous abdomen, or by absolute lack of abdominal contents, in the absence of fat, or in enterostenosis. As the thorax in the erect position rests on the abdomen, especially in persons who are not very muscular, excepting on forced inspiration, the filling of the abdomen determines the size of the lower thoracic opening and thus of the dome of the diaphragm. Under the above-mentioned conditions of diminished abdominal contents, therefore, the organs of the dome of the diaphragm must enter, singly or together, into the free abdominal cavity, either in part or entirely. This will be the case the more markedly when the abdomen is emptied still more, as in bodily exertion, coughing, etc., or when the diaphragm is even directly depressed.

The treatment must not restrict itself simply to raising again the partly or wholly descended organs. It is necessary to again enlarge the dome of the diaphragm, or, what is the same thing, to bring the thorax permanently more into the position of inspiration. Gymnastic exercise can effect this generally but imperfectly. Rest in bed, which at once causes the position of inspiration of the thorax, and therefore draws up the wandering organs, usually acts insufficiently and temporarily, even if long continued and supported by milk diet in deficient fat and enterostenosis. Rest in bed, however, shows us by its marked effect on the reposition of the organs what we have to do in the erect position. We need but support the abdomen in such a way that the thorax assumes the position of inspiration corresponding to that in the recumbent position. The enlargement of the dome of the diaphragm

then at once draws up the organs, as in the recumbent position. For this support of the abdomen binders are less appropriate, because they press also in a frontal direction in a useless manner, and because they lift too little in a sagittal direction. Besides, they easily slide upward. To attach to the binder so-called kidney pads, which is sometimes seen, is altogether senseless, because, when compression is universal, local pressure cannot act upon the kidneys without causing great inconvenience. If it is intended to act upon one kidney alone, a corresponding pad the size of the palm of the hand must be kept pressing on the place of the repositied kidney without any other constricting bandage, in a way resembling the English rupture truss, by a strong spring reaching over from the healthy side. The author has seen such pads worn with advantage as long as ten years in cases of enterostenosis. For the most common cases the best effect is attained by keeping a transverse oval, concave abdominal shield (between symphysis and navel) appressed by being joined to a sacral pad with two springs passing laterally loose around the pelvis. For proper selection we need not only a larger number of abdominal shields and sacral pads, but also a large assortment of springs of varying length and power. The latter must range between two and twelve, and even sixteen pounds, which had best be divided between the two springs. The increased pressure in the abdomen by springs of sixteen pounds tension amounted in one case to only two centimetres of water pressure, and still kidneys, stomach, and liver were kept well in place—a proof how little the intra abdominal pressure has to do with the wandering of the organs. Stitching up the kidneys is to be rejected, with rare exceptions. It removes at best but a symptom of a general disease, is prone to relapse when the causes persist, and when the latter are overcome is superfluous. In one case, in which both kidneys had been stitched up by a surgeon and kept their places, the symptoms had remained unchanged. They disappeared at once on wearing the abdominal shield, because thereby all the wandering organs, and not the kidneys alone, were withdrawn into the dome of the diaphragm. The author has tried the method so thoroughly that he can recommend it in full confidence. But it should by no means be relegated to the truss maker.

KALTENBACH (Halle a. S.) read a paper on

THE MECHANISM OF LABOR.

The fetal spine presents shallower curvatures than that of the adult; but its mobility in all directions is much greater, since the lower osseous nuclei of the vertebral bodies are kept

apart by high cartilaginous plates, and the entire ligamentous apparatus is very distensible. Immature fetuses show a much greater, hypermature fetuses a more limited flexibility of the spinal column than fetuses of medium size.

In the act of emergence of the fetus, all the directions of the mobility of the spine may be called into play—flexion and extension, lateral inclination and torsion around the longitudinal axis, at times even several motions in combination. The greatest mobility is shown by the cervical and the lumbar spine; that is, those portions whose mobility is called into play by the mechanism of cephalic and pelvic presentations.

The emergence in the various fetal presentations is effected the more readily in proportion as the fetal spine is movable in the direction of the terminal rotation of elevation which turns the presenting part of the child around the symphysis. The emergence in head presentations is effected by extension or flexion of the head; in pelvic presentations, by lateral deviation of the pelvis. The former motions take place in a sagittal, the latter in a frontal plane of the fetal body.

The act of emergence is effected by extension only in occipital presentations; by flexion, in vertex presentation, in face presentation with chin anterior, and in brow presentation.

In face presentation with chin posterior, the act of emergence would have to be effected by further extension; the labor, however, is completely arrested because the possible extension of the cervical spine has already been exhausted.

The possible limit of the excursion of the presenting fetal part in the direction of the rotation of elevation, according to measurements on living newborn children and the bodies of dead fetuses sawed through in a sagittal direction, is:

In occipital presentation, 120° to 130° (extension). In face presentation, chin anterior, likewise 120° to 130° (flexion). In brow presentation, 75° (flexion). In vertex presentation, 35° to 40° (flexion). In face presentation, chin posterior, 0° . In breech presentation, 30° (lateral flexion of the lumbar spine). In face and brow presentations a special difficulty is caused by the fact that the cervical spine bent with the convexity forward, under the resistance of the perineum, must first pass through a complete straight extension before it can attain the shortened flexed position (demonstrated on frozen sections).

Also, in the passage of the shoulders in the course of spontaneous evolution, in delivery conduplicate corpore, the flexibility of the spine plays a decisive part. The same is true in the delivery of anencephalous and double monsters, in fetal rigor mortis, in congenital rachitis, and finally in those forms of fissured abdomen in which the fetus appears completely doubled up backward.

This importance of the cervical spine throws a new light on the necessity of the second cardinal motion of rotation of the head around the vertical fetal axis.

In order to pass out of the pelvis it must reach a position in which it can execute a movement of flexion or extension in the sagittal plane. The means for attaining this position lie in the unequal resistance met by the two halves of the skull behind the anterior pelvic wall. The shorter occiput is deflected forward, and the more this is done under the elastic counterpressure of the pelvic floor the freer becomes the movement of extension of the head which finally advances the occiput under the pubic arch.

J. VEIT (Berlin) read a paper on

HEMATO-SALPINX.

As operations for tubal diseases have multiplied, the cases have become more numerous in which the tube was found distended with blood without occlusion of the genital canal. In these cases we may have to deal with a retention of an ovum in the tube—tubal mole or tubal abortion—or with a hemorrhage into the previously distended tube, or, finally, with distention of the tube by blood. Only the two latter conditions can be called hemato-salpinx.

The author's particular object was to determine the macroscopical criteria of the tubal moles, for it is likely that generally there will be other differential marks than the demonstration of villi, which is as troublesome as it is interesting. In cases of pregnancy the abdominal ostium is always open, since there is no internal transmigration. Of course it may be difficult to establish this, but the knowledge of the different possibilities should be one easily acquired. If there be some other cause for the formation of a hemato-salpinx, then the complete closure of the fimbriated extremity is a preliminary condition. Veit, therefore, looks upon the patency of the fimbriated extremity—hitherto usually disregarded in the descriptions—as the decisive criterion of the origin of hemato-salpinx, or of tubal moles and tubal abortions.

GUSTAV KLEIN (Würzburg) read a paper on

THE DEVELOPMENT AND INVOLUTION OF THE DECIDUA.

The vessels, which have been thoroughly studied by other observers, are left out of the consideration. The other important constituents of the mucosa or decidua are the superficial and glandular epithelia and the interstitial connective tissue.

(a) *The Epithelium*.—All authors agree that in intra-uterine

pregnancy the glandular epithelium of the uterus changes its form, becoming much flatter. This flattening of the uterine epithelium is manifested also in tubal pregnancy. A conditionally similar alteration of the epithelium is found in ichthyosis uteri, but then it has at the same time several layers; also in glandular carcinoma of the body of the uterus (Hofmeier), in which markedly cuboidal or flattened superficial and glandular epithelium may be found here and there; and, finally, in salpingitis (Orthmann). None of these conditions, however, in connection with the other symptoms, can be mistaken for pregnancy. The flattening of the glandular epithelium, as is well known, affects mainly the upper portion of the glands; in their fundus, and especially where the ends of the glands project between the uppermost layers of the muscular tissue, cylindrical epithelium may persist to the termination of pregnancy; subsequently the new glandular and superficial epithelium develops from this. But where the latter might remain unchanged during pregnancy, that is, in the lowest part of the body of the uterus immediately above the internal os, it also becomes cuboidal or flattened. This observation, which it was impossible to find in the literature, is particularly distinct in a pregnant uterus of the second month described by Hofmeier and Benckiser in their atlas as Specimen IV.

Accordingly, the flattening of the glandular and superficial epithelium is always found during pregnancy, and (aside from the three above-mentioned conditions which are easily differentiated) then only; it is therefore characteristic of it. The altered form is not due to pressure—a fact to be emphasized in opposition to Gottschalk—for it occurs in the uterine epithelium during tubal pregnancy, and was not found in the closed horn of a bilocular uterus which was fully distended with blood, despite the high pressure which had forced the glands almost parallel to the surface.

—The decidua cell cannot serve as a sign of pregnancy, for, on the one hand, it is found in other conditions (in endometritis, Ruge; in dysmenorrhea, Leopold; after phosphorus poisoning, Overlach); on the other hand, it is not present even during pregnancy in every month, nor in every expelled or curetted piece of mucous membrane.

Hence, in order to establish the diagnosis of “existing or recently interrupted pregnancy,” pieces of uterine or tubal mucosa will have to be examined especially for cuboidal or flattened epithelium.

The Decidua Cell is said to be derived:

1. From immigrated white blood corpuscles (Hennig, Ercolani, Langhans, Meyer).

2. From the connective-tissue round cells of the interstitial

tissue (Leopold, Waldeyer, Wyder, Orthmann, Heintzel, and others; Gottschalk leaves this and the following possibility an open question).

3. From the glandular epithelium of the body of the uterus (Friedländer, Frommel, Ayers), or, in tubal pregnancy, from the tubal epithelium (Frommel).

4. From the cervical epithelium (Overlach, Winckel, Kupffer).

The derivation from the white blood corpuscles can be at once excluded, according to the most recent investigations as to the relation of these cells to the connective-tissue cells (Grawitz, Ziegler, Orth, and others). The derivation from the epithelium of the body of the uterus or tube is quite insufficiently demonstrated. Overlach's theory has been advanced on the strength of careful examination and by the authority of Kupffer and Winckel; nevertheless mistakes can by no means be excluded in view of the similarity of form of the epithelia and the decidua cells. Far easier than the negative is the positive proof that the decidua cell is nothing but a changed connective-tissue round cell; for we may observe on deciduæ of the first months every transition from the round cell to the decidua cell: the former shows at first no border of protoplasm, then a very narrow one which becomes steadily larger until it changes to a wide, somewhat granular mantle of protoplasm and clearly demarcated nucleus that measures one-half, one-third, or one-fourth of the diameter of the cell. Another point in favor of the derivation from the connective tissue is this: the polygonal or spindle-shaped decidua cells show distinct fibrous processes which directly merge with the fibrous framework of the decidua, and in fact help to form it. They cannot be brushed out without injuring the fibrous framework. Moreover, decidua cells are found in endometritis in small groups at a distance from glands whose epithelium is of the high cylindrical type, and therefore surely cannot pass as the originator of the decidua cells.

The decidua cell, then, is a connective-tissue cell and originates from the connective-tissue round cells.

The entire decidua does not consist of decidua cells, but numerous round cells are always found, especially in the later months in the deeper layers. From these redevelops later, when the pregnancy has run its course, the interstitial tissue of the mucosa of the uterus and tube; hence they serve for its reproduction, and may therefore be called substitution cells.

Involution of the Decidua.—Even before the second half of normal pregnancy, or earlier under pathological conditions (endometritis deciduæ), the decidua cells grow less distinct, their nuclei are less readily stained, they swell, become in part amorphous, and finally in mature placenta, in the

serotina as well as the vera and reflexa, they hardly retain their form except here and there; this alteration increases to the end of pregnancy, when they are in a condition of necrobiosis. The ovum then is surrounded by a necrobiotic mantle which, though interrupted in the serotina by the blood current at the openings of the vessels, is still necrobiotic. The ovum thereby becomes a foreign body, and the uterus or tube, like every contractile organ, has the tendency to expel the foreign body. This, then, might constitute one cause of the onset of labor. This old conjecture, expressed already by Friedländer and others, can thus be emphasized anew. It would be erroneous to ask why this necrosis is always completed just after ten months. For even normal pregnancies terminate at periods differing by thirty and more days; and should the necrosis be completed earlier by pathological conditions (endometritis, cessation of the stimulus to the formation of decidua after premature death of the uterine or tubal fetus, hemorrhages, etc.), the expulsion of the ovum occurs sooner—abortion or premature labor.

The involution of the decidua, therefore, is prepared for as early as the second half of normal pregnancies; after normal labor it is effected by absorption of the still present decidua cells in the deeper remaining layers; though, of course, in normal labor the greater portion of the decidua is exfoliated. In a uterus five hours post partum no trace of decidua is present at the site of the vera, merely a layer of fibrin with numerous round cells; below are the "substitution cells," which extend remarkably deep between the muscular bundles in greatly increased numbers. The glandular epithelium is partly cylindrical, partly low or flat. In another specimen, three days post partum, the round-cell layer is thicker, presents exactly the appearance of young granulation tissue; the existing fundi of the glands possess only cylindrical epithelium; the low epithelium seems to be cast off and not immediately transformed into the cylindrical variety, but replaced by the latter.

Further investigation must show by what time the normal thickness of the mucosa of the uterus is reached and superficial epithelium is again formed from the glandular epithelium. This would be the first type of the involution of the decidua, such as is the rule after normal labors.

The process may be different after abortions, in ruptured tubal pregnancy, etc., when the uterine decidua persists in part or entire and remains in place. These relations can be best appreciated on shreds of mucous membrane obtained, a few days or weeks after abortion, by the curette. In the first few days after an abortion the low epithelia and the decidua cells still predominate; the substitution cells, however, have

already increased largely. In a specimen four weeks after abortion round cells predominate, while islands of ill-stained, here and there barely recognizable decidua cells are still present. The latter are partly in a condition of granular disintegration, and one can see fibrous defects, the size of a decidua cell, filled only with unstained granular masses, while the fibrous framework proper is thickly sprinkled with vigorous, intensely stained round cells; the glandular epithelium, however, is chiefly but not exclusively cylindrical. In such cases, therefore, the decidua in situ may redevelop into normal mucosa by the absorption of the necrotic decidua cells, proliferation of the round cells, and substitution of cylindrical for the low epithelium. This is the second type of involution.

It is important for the diagnosis of a concrete case that four to five weeks after abortion, or, as I have seen in one case, four weeks after ruptured tubal pregnancy, we still find decidua cells and low epithelium here and there in the everted mucosa of the uterus.

Friedländer designates the necrosis of the decidua cells as fatty degeneration. But if we cut fresh sections with the freezing microtome from a decidua after abortion, or pull off pieces of the serotina from ripe placenta after dissecting away the attaching villi (usually only very small pieces can be thus secured), it is impossible to observe the changes characteristic of fat by the addition of ether. In like manner such pieces subjected to one-per-cent osmic acid, even for sixteen hours, become at most yellowish-gray or smoky gray, but not black. Even under the highest powers we then see in the cells only very isolated black droplets, more frequently most minute dots which on shifting the focus appear first black, but then become glossy and very refractive, hence obviously not fat droplets. On the other hand, in most places the protoplasm of the decidua cells is most markedly granular, the nucleus indistinct, though indeed at other points well-preserved decidua cells may still be found. Langhans' well-known fibrin layer (fibrin streak) likewise permits the recognition of the peculiarities of necrosis (partly coagulation of serum, partly necrosis of the decidua cells). Hence the process seems to be, not fatty degeneration, but coagulation necrosis.

Summary of the results :

1. The lowering (flattening) of the superficial and glandular epithelium of the body of the uterus and the tube is characteristic of pregnancy.

2. The decidua cell is a connective-tissue cell, and originates from the round cells of the normal mucosa of the body of the uterus and the tube. It does not form a characteristic indication of pregnancy.

3. The gradual occurrence of necrobiosis of the decidua cells may possibly form one of the causes of the onset of labor, since the ovum thereby becomes a foreign body.

DOHRN (Königsberg) read a paper on

GONORRHEAL DISEASE OF THE ORAL MUCOUS MEMBRANE OF
THE NEWBORN.

The first case noted occurred in a full-term child 8 days old. Eroded spots covered with a grayish-yellow, smeary secretion were present on the edges of the gums, the back of the tongue, and the posterior portions of the palate. The diseased parts of the mucous membrane had attracted the particular attention of the acting assistant, Dr. Rosinski, who suspected, since the mother of the child was suffering from pronounced gonorrhea, and the child at the same time was affected with ophthalmo-blennorrhea, that perhaps this oral disease might have a gonorrheal origin. In order to obtain a clear picture of the course, the mouth received no local treatment. The affected portions were minutely inspected every day, and colored drawings made of the condition. At the same time excised pieces of the diseased mucous membrane were found to contain gonococci which at the eroded spots had penetrated into the depth along the interstices of the cells. That the micro-organisms were really gonococci was proved beyond question. After four weeks the eroded portions had skinned over and the last traces of the disease had disappeared. The general health of the child had not suffered in any perceptible degree. Four additional cases came under observation in the course of the ensuing spring. The result of the examination of these children, who likewise were born of gonorrheic mothers, was exactly like that in the first case.

There can hardly be a doubt that these diseases have often been seen before, but the proof that they are of gonorrheal origin seems to have been furnished here for the first time. It was formerly believed that the inner surface of the mouth was not receptive of the gonorrheal virus. This certainly does not apply to the newborn, in whom the gonococci are capable of penetrating into the depths at those portions of the mucous membrane which are particularly exposed to the loss of the upper epithelial layers by mechanical lesions.

BUMM (Würzburg) read a paper on

THE IMPORTANCE OF GONORRHEAL INFECTION IN THE CAUSATION
OF SEVERE GENITAL DISEASES IN THE FEMALE.

In the course of more than ten years the author has traced,

always under the control of the microscope, gonorrheal infection in woman, and, without being able to enter into details, desires to explain only the main points which have resulted from his investigations.

1. Gonorrhea in woman runs its course merely as a superficial affection of the mucous membrane. The cocci penetrate only into the epithelium as far as the connective tissue, but do not enter the latter. The epithelium which in the beginning is cast off through the profuse suppuration is rapidly regenerated, becomes denser and like pavement epithelium. Thenceforth the gonococci no longer penetrate, the germs multiply only in the secretion, where, however, they may persist for months and years.

2. The gonococci have nothing to do with septic processes; though they may cause suppuration in mucous membranes, they perish in the connective tissue.

Where septic processes occur the infection is mixed; the germs of sepsis, however, are very frequent in gonorrheal pus; the morbidly altered purulent genital secretion allows these fungi to take root from without.

3. The chief seat of gonorrhea in woman is in the urethra and cervix uteri; the infection of the cervix causes symptoms and trouble only in the beginning, but once having become chronic it may persist for years without any inconvenience.

Serious symptoms arise only when the infection spreads from the cervix into the uterine cavity and thence into the tubes. The gonococci possess no power of spontaneous motion, and are able to spread merely by division in one direction for a short distance, like a grass plot. Extension over larger surfaces must be effected mechanically by transportation with the secretion. The internal os uteri under normal conditions prevents the entrance of the cervical secretion into the uterine cavity, and hence also the spread of the gonorrheal infection into the endometrium. Among the influences which may favor the infection of the interior of the uterus, menstruation is to be accorded the first place. Especially more profuse hemorrhages, etc., during menstruation may cause regurgitation of the blood and in this way carry the germs from the cervix into the uterine cavity. The second place in the infection of the uterine cavity is taken by mechanical influences, such as coition, the sound, and intra-uterine treatment; the third place, by the puerperium.

When the gonococci have reached the endometrium, again special mechanical conditions—for instance, during menstruation, active movements, in the puerperium—are required to enable the germs to pass through the tubal orifices.

WERTHEIM, in reply to Bumm's assertion that his germs were not gonococci, maintained that his cultures were un-

doubtedly pure cultures of the gonococci, as was proved among others by the fact that he had succeeded in five instances in producing gonorrhea experimentally.

That gonococci may cause purulent liquefaction of the tissue is proved by two of his cases of closed ovarian abscesses which contained nothing but gonococci.

BUMM (Würzburg) read a paper on

PUERPERAL ENDOMETRITIS.

Microscopic bacteriological examination shows, what clinical experience has long demonstrated, that two forms of puerperal endometritis must be distinguished—the putrid and the septic. Either one may occur in a pure form, but they may also be mixed.

In the present state of our knowledge we must call putrid endometritis those forms in which a sloughing, more or less deeply extending decomposition of the puerperal decidua occurs, with or without simultaneous retention of parts of the products of conception.

Septic endometritis exists when the germs of septic wound infection, chiefly the streptococci and next the pyogenous staphylococci, begin to act on the puerperal decidua.

The author then described the course of the germs in the various forms of the disease, and in speaking of local treatment expressed the belief that only in the early beginning of the infection could anything be expected from the disinfection of the endometrium. Where the infection is less virulent, recovery ensues with or without local treatment; in virulent infection local disinfection, even if combined with curetting, is usually too late, as the fungi have penetrated deeply into the uterine parenchyma. An intra-uterine irrigation, as Lusk truly remarks, has about the same value as when the surface of the skin is rinsed with carbolic or sublimate solutions in cutaneous erysipelas.

Better results than with disinfectants may, perhaps, be reached by making the local conditions in the uterus as unfavorable as possible for the spread of the germs, by effecting the most complete detachment of all parts of the placenta, by securing thorough contraction of the uterus in the course of the puerperium by ergotin, and by taking care that the placental venous sinuses be closed in a physiological manner by simple contact of their walls and not by thrombi.

KALTENBACH (Halle a. S.) read a paper on

AIDS TO GYNECOLOGICAL INSTRUCTION.

Only few can take part in the digital examination of gynecological cases, and it is rare that anything can be seen at a

distance. It seems desirable, therefore, to make use of every auxiliary in order to facilitate the understanding of a case presented, by the entire class. To this end Kaltenbach had prepared charts, in which the course of menstrual and pathological hemorrhages is marked by red lines, the height of which at the same time shows the intensity of the bleeding. Such hemorrhage curves are used for the entry of additional symptoms of disease, whose temporal connection with the hemorrhage thereby becomes distinct. The student at once gains a synoptic insight into the most important points of the entire history of the case, and thus may take an active part in the mental processes which lead to the formation of the diagnosis. To the instructor the clinical discussion is much facilitated if he can appeal by graphic delineations to the optic nerve instead of to recalled conceptions by way of the acoustic nerve. Many hemorrhage curves are exceedingly characteristic, and, when amplified with a few entries, can be read like temperature curves.

DOEDERLEIN (Leipzig) read a paper on

VAGINAL SECRETIONS AND VAGINAL GERMS.

The object of these investigations was to obtain an answer, by cultivation and determination of these micro-organisms, to the question whether the germs producing puerperal fever are always introduced into the genitals from without, during labor or the puerperium, or whether they might have been present in the vagina before.

It is only by similar bacteriological examinations that an agreement can be reached in the controversy now agitated whether the internal genitals of parturient women should be disinfected or not. In opposition to Steffek, the author still rigidly adheres to the division of the vaginal secretion into two forms—a normal physiological and a pathological one, as previously maintained by him in Berlin. Of the 156 gravid women examined by him he found the secretion healthy in 88 cases, or 56.4 per cent; pathological in 68, or 43.6 per cent.

The two varieties of secretion can be sharply differentiated clinically as well as anatomically and bacteriologically. When the secretion is pathological, disease of the mucosa is frequent—for instance, granular vaginitis, erosions, pointed condylomata, etc.

The healthy secretion has a marked acid reaction and contains only a limited number of germs, mainly certain bacilli. These are characterized by the fact that they grow only at 98.6° F.; the stroke culture on agar-agar is extremely fine, and unless special precautions are taken it dries and the bacilli

perish; they flourish best in liquid media. In saccharine nutrient bouillon they are able to form free acid, and Doederlein ascribes to this fact the strong acidity of the normal vaginal secretion. Besides these regularly present bacilli, Doederlein found in thirty-five per cent of the cases examined a yeast fungus in the normal secretion. Its more careful study showed it to be identical with the thrush fungus, *Monilia candida* Bonorden (Plaut). According to observations by Winckel, Hausmann, and others, thrush may cause a mycosis in the vagina of gravid women. Cocci were rare and sparse in the normal secretion; staphylococci or streptococci, which were specially looked for, were never present; experiment showed that these pathogenic germs were unable to thrive in the secretion of the normal vagina. Doederlein therefore announces that the secretion of the normal vagina does not form a source of infection for puerperal fever; hence that no disinfection of the healthy vagina is necessary, whether or not internal examinations are made during labor.

In the pathological purulent secretion he was able to cultivate the *streptococcus pyogenes* in six cases out of forty-seven. This proved virulent to animals. The characteristics of this secretion are, that it is usually slightly acid, in pronounced cases neutral or alkaline, and represents a pyoid material containing numerous micro-organisms, mainly cocci. The somewhat frequent occurrence in this secretion of streptococci which possessed their full virulence shows it to be one of the sources of infection for puerperal disease. If these germs are carried into the uterus by careless frequent examination, they may become particularly dangerous.

With reference to practical obstetrics these investigations show that the greatest danger to parturient women lies in the internal examination, which may cause infection either by the transfer of pathogenic germs from without or by possible introduction of these schizomycetes into the uterus from the vagina. However, observations in the puerperium made at the Leipzig clinic upon women who had not been examined showed that the presence of purulent secretion in the vagina may, even without internal examination, cause disease in the lying-in period, though the affection was generally of a milder type.

ANATOMY OF THE VAGINAL PORTION OF THE CERVIX.

DUEHRSEN (Berlin) reported that he had found in the vaginal portion of the cervix a quite typical arrangement of elastic fibres, so that the peripheral half contains a very strongly developed network—a superficial one under the pavement epithelium, a deeper one around the vessels—while

the central half is almost bare. This network of elastic fibres is to be regarded as the direct continuation of the analogous tissue of the vagina into the uterus. This anatomical condition explains the merging of the cervix into the parturient canal during labor. The vaginal portion is thereby unfolded; the inner segment with numerous muscular fibres blends with the uterus, the external one with the vagina. This unfolding requires the harmonious co-operation of muscular traction from above and horizontal pressure of the ovisac.

In connection with appropriate specimens the speaker further referred the rigidity of the soft parts in old primiparæ, who had remained sterile for years despite cohabitation, to a defective development of the elastic fibres which is typical of the newborn. Hence in such cases attempts at mechanical dilatation of the os during labor can accomplish nothing.

The speaker further demonstrated, on a specimen showing a healing erosion, how the glands of the erosion become surrounded with elastic fibres. As the cervical glands do not possess elastic fibres, these glands can only have formed from the pavement epithelium in the way suggested by Ruge and Veit.

G. KRUKENBERG (Bonn) read a paper on

CASTRATION AND CILIATED EPITHELIUM.

Bischoff, Becker, and Wyder have demonstrated that in childhood only the tubes have ciliated epithelium; the uterine mucosa acquires ciliated cells only with puberty. In the climacteric the entire ciliated epithelium perishes (Moericke, Klob). It appeared interesting, therefore, to ascertain whether the cilia vanish also after castration, in the anticipated climacteric. The examination of castrated women can give no information on this point, because ciliated epithelium is not uniformly found in endometritis, which is nearly always present before castration. The experiments were therefore made on rabbits, both hares in which the uterine horns are ciliated and German rabbits in which only the cervix has cilia. For about the first seven months after the operation the uterus retained its former weight, and its ciliated epithelium likewise remained unaltered. After from nine to ten months, however, a considerable loss of weight occurs in the uterus, at the same time the ciliated cells disappear both from the uterus and the tubes. The closure of the abdominal orifices of the tubes, which always exists at the same time, may have some influence on the loss of the cilia in the tubes, but has no bearing on the uterus, with which we are chiefly concerned ;

for we see that the loss of the cilia is connected with the atrophy of the uterus, and we know, on the other hand, by Kehrer's experiments that occlusion of the tubes does not cause atrophy of the uterus. Castration, therefore, has the same effect on the uterus as the climacteric—the ciliated epithelium disappears, but not until the uterus has become atrophic. If a very young animal is castrated, cilia do not form at all.

H. W. FREUND (Strassburg) read a paper on

EXPERIENCES WITH THE ELECTRIC DRY-CUP.

He maintained, in the first place, that the relations between the breasts and the pregnant genitals are effected mainly through the blood, but that with some definite stimuli they may be produced through the nerves. He had always succeeded in producing uterine contractions in gravid women by a sufficiently strong irritation of the nipple with the constant current. Freund attempted to utilize this experience practically, as well as that of Scanzoni, who had been enabled to excite pains by applying dry-cups to the breasts, by combining them in the “electric dry-cup.”

At the Strassburg female clinic the induction of premature labor by this means was tried in five cases and the induction of abortion in one case. In all these cases not only were good pains produced in a short time, but also the labor was initiated in so far as the cervix was softened and more or less dilated. Beyond this point no further effect could be obtained with the electric dry-cup. The softening and dilatation of the cervix, however, were effected rapidly and well.

Hence the electric dry-cup seems to be an excellent preparatory measure for the induction of premature labor, a substitute for the natural activity in the first stage of labor. The method is new and capable of improvement. The results thus far should lead to further experiments.

KEHRER (Heidelberg) read a paper on

LAPARATOMY.

According to the author, some steps of the operation and the after-treatment require improvement.

1. Prevention of the escape of pathological and other fluids into the abdominal cavity. Sponges and gauze compresses do not suffice for this purpose, as they are porous. Gutta-percha paper should be made to surround the tumor in funnel shape, and be pushed into the abdomen as far as the pedicle, and the space between tumor and paper be filled with gauze compresses.

2. Prevention of adhesions. This should be aimed at by asepsis after opening the abdomen, by avoiding rough handling of the intestines, limiting drainage, and stimulating intestinal peristalsis by laxatives administered (per os and rectum) a day after operation. The intestine, however, is remarkably atonic after laparotomy.

3. Producing a firm cicatrix of the abdominal wall, by resection of an eventually enlarged linea alba, by drawing the edges of the divided peritoneum into the abdominal wound, and by numerous sutures, embracing muscle, sheath of the rectus, and skin with adipose, about one and a half to two centimetres apart, with intermediate superficial sutures.

FRITSCH (Breslau) read a paper on

THE TREATMENT OF RECENT PUERPERAL EXUDATIONS.

He discussed the question, What is to be done with recent paracervical puerperal abscess? This question has a general and a special aspect. In general, without reference to the locality, no one will deny that if pus has accumulated anywhere in the body and is encapsulated, the pus must be evacuated. No one would announce as a principle that the organism should be left to absorb large quantities of pus.

The logical result of these views was that he set himself the task to evacuate the pus, whenever and wherever present, as soon as possible and feasible.

Of course, opposed to this view is the fact that parametritic abscesses as a rule recover spontaneously. But thirty years ago a mastitis lasted three months, while now it is recovered from in a week under correct treatment. Nowadays higher demands are made of the physician. We aim not merely at saving life, but at restoring our patients to health and usefulness as early as possible. Nay, more, the object to secure usefulness and enjoyment of life furnishes us a sufficient indication to undertake even operations which endanger life. Hence in general we must acknowledge the justifiability of the operative treatment of purulent exudations, even while admitting that the old expectant treatment gave good results *quoad vitam*.

The special side of our question, however, lies in the local conditions. When an abscess is situated under the skin at a superficial point where there are no large vessels—for instance, above Poupart's ligament—an incision is easily made. But many a physician hesitates to introduce the knife deep into the pelvis for fear of technical difficulties.

Injury of the ureter by the knife is no more probable than of the uterine artery. The pathogenesis of these abscesses, which arise in consequence of parturient lesions of the

cervix, guards us against injury of the ureter or the uterine artery. The ureter lies more laterally and forward; it is not dragged nearer by the recent abscess, but is pushed away. The uterine artery passes higher up and is likewise crowded upward and sidewise by the abscess. The primary exudation never lies in the paravaginal connective tissue, but above the pelvic diaphragm; much higher than, say, an accumulation in Douglas' pouch.

On making the incision, the vagina is first divided, and by repeated palpation the loose paravaginal connective tissue is reached. Feeling around in the opening, the exudation is located and carefully opened, the knife preparing the way. When in doubt as to the bearings, a hypodermic syringe is inserted, some pus aspirated, and the knife made to follow the canula. The moment the first drop of pus flows down the knife, marked by a yellow color in the blood, a stream of sterilized water is directed on the opening. The water washes away the pus, which must not spread in the loose connective tissue above the vaginal wall. The incision is continued, bearing toward the uterus, until the finger can readily enter the pus cavity. Immediately after this the wall of the abscess is united with the vagina all around by means of strongly curved needles, for various reasons. In the first place, the hemorrhage is arrested by the suture: an anemic puerpera must be saved as much blood as possible. In the second place, the paravaginal connective tissue is thus shut off. Thirdly, we are sure that the abscess is well shut off. Finally, the threads of the sutures which are left long have the great advantage that by being drawn to the right or left we see our way clear and can make the opening accessible and wide. Then the cavity is irrigated until the water escapes perfectly clean; but excessive water pressure should be avoided by using a return-current catheter.

The after-treatment consists in frequent irrigation. An iodoform tampon will not assure permanent asepsis. We would not dare to tampon tightly, and a loose tampon will not fill all the depressions. A drainage tube should be particularly cautioned against. It is apt to fall out, and if stitched to the opening it would prevent contraction of the cavity, and may even cause hemorrhages and intestinal fistulæ by pressure.

Such abscess cavities contract gradually, owing to the intra-abdominal pressure. The abscess cavity lies in the abdomen; hence, when there is a hole below and anterior pressure ceases, the abdominal pressure crowds the wound surfaces together. The way by the vagina seems to the author the most natural. The large wounds in the parasacral method are certainly a contra-indication. We do not aim at surgical works of art, but at rapid recovery.

H. LOEHLEIN (Giessen) read a paper on

THE PROGNOSIS AND TREATMENT OF PUERPERAL ECLAMPSIA.

The paper was based on material secured from all the larger clinics in which the German language is spoken. Altogether, from April 1st, 1888, to October 1st, 1890, among 52,328 labors, 325 cases of eclampsia were observed. The highest average figure is that of the obstetric clinic of the Charité (1:67), while the proportion is small in the three Vienna maternities (1:318).

Of the 325 persons affected, 63 died of the eclampsia and 14 of other complications. The rate of mortality, 19.38 per cent, shows a very satisfactory progress compared with the results of earlier compilations, especially as grave forms were frequent in the material. While formerly it was justly assumed that one-third of the patients succumb, we now see the proportion reduced to one-fifth. The lowest rate of mortality (11.6 per cent) Loehlein found in primiparæ who were first affected post partum, the highest in multiparæ attacked ante partum.

Among the sequelæ noted in the 248 surviving patients, mention should be made of 13 cases of pronounced psychosis, most of whom recovered completely; 5 of pneumonia, 3 of pleuritis, and 22 in whom prolonged kidney affections were observed, which in 11 cases had begun as chronic nephritis.

Operative interference was required in 71.1 per cent of the cases. Among these were 108 forceps operations, 19 versions, 13 mutilations of the fetus, 2 artificial abortions, and 7 Cesarean sections. Of the latter 5 were done after death, 1 *in articulo mortis*, and 1 on the living, the last with recovery of mother and child.

As to drugs, by virtue of G. Veit's (1887) warm recommendation, a large number of obstetricians, the author included, have used by preference large doses of morphine. In the statistics, the eight clinics in which this mode of treatment was adopted show a very favorable rate of mortality (13.8 per cent as compared with the general mortality of 19.38 per cent). The figures, however, are still too small for drawing final conclusions.

SKUTSCH (Jena) read a paper on

THE TREATMENT OF CHRONIC ENDOMETRITIS.

Clinically the two main forms of chronic endometritis must be strictly separated: in the one the essential feature consists in abnormal, mostly atypical hemorrhages (hemorrhagic

forms); in the other, in the pathological quantity and quality of the uterine secretion (catarrhal forms).

With reference to the indications in the hemorrhagic forms the greatest unanimity exists; the treatment consists chiefly in the removal of the diseased portions, curetting of the mucosa, removal of distinct proliferations, followed eventually by cauterization. At present there is also more harmony as to the fact that it is more rational, when small tumors are suspected (that is, when the uterus is enlarged), to make the internal surface accessible to the finger and thereby to a suitable treatment.

Catarrh of the uterus is chiefly identified with hypersecretion (pure catarrh); the secretion may be mixed with pus, and some special purulent forms are known (particularly the gonorrheal). As a rule, much is said of a purulent catarrh of the cervix, while that of the body is often neglected. In practice, in every case of purulent discharge from the uterus the entire mucous membrane, both of the cervix and body, should be treated.

In the treatment of this form of chronic purulent endometritis probably none of the methods hitherto in use will be alone effective. The results obtained with Schultze's method (methodical irrigation of the uterus, preceded by dilatation if necessary) were satisfactory in the great majority of cases. In recent years, conical metal dilators of increasing circumference were largely employed.

In the daily irrigations a three-per-cent soda solution is first employed in order to dissolve the mucus, and is followed by the medicated solutions. Many different drugs were used (carbolic acid, in two-and-one-half-per-cent solution; sublimate, 1 : 5,000; acetate of alumina, lysol, etc.). Perhaps the main thing is the purely mechanical effect of removing the secretion. The purpose in view is best obtained by simple catheters rather than by those constructed on the Fritsch-Bozeman principle.

Of late Skutsch has introduced iodoform gauze for the purpose of dilating the uterus by Vulliet's method, and has found this treatment particularly advantageous when combined with Schultze's irrigations. If the uterus has a width of but four millimetres, a strip of gauze one centimetre wide can be introduced. The author exhibited different sizes of an iodoform-gauze packer which resembled Weinhold's instrument; their anterior end is somewhat conical and they have a small groove at the point; they are divided into centimetres, and are provided with a movable disc to be fastened by a screw, so that the rod cannot be inserted further than the length of the uterus permits. The procedure is neither

dangerous nor painful and can be performed in office practice. Skutsch used ten-per-cent iodoform gauze; but the material can also be impregnated with other substances or be soaked with drugs—for instance, creosote-glycerin (Pozzi, Frédéricq).

In obstinate cases of purulent endometritis the curette is likewise used in Schultze's clinic. In such cases it is advisable to use iodoform gauze and irrigations as after-treatment.

Erosions usually disappear when their cause, the purulent endometritis, is overcome. Should this not be the case, cauterization may be employed at the end of the treatment. In like manner, should there be decided anatomical alterations of the cervix, Schroeder's or Simon's operation may be performed at the termination of the course; or, where ectropion is pronounced, Emmet's operation.

FROMMEL (Erlangen) read a paper on

THE HISTOLOGY AND PHYSIOLOGY OF THE MAMMARY GLAND.

He reported some anatomical investigations he had undertaken on the mammary glands of cats, guinea-pigs, and white mice. The result thus far shows that with the onset of lactation two essentially different processes can be observed in the gland: in the first place, in gravid animals a very decided formation of fat occurs in the protoplasm of the individual epithelial cell; this goes so far that shortly before delivery the whole or greater part of the protoplasm is changed into fat, the cell nucleus being generally pressed downward, often also sidewise against the wall, and markedly flattened. The nuclei of the epithelia remain quite unaltered before lactation, that is to say, before birth. After birth the fat is excreted by the cell in larger and smaller drops into the lumen of the gland. This fat formation in the protoplasm continues all through lactation, fat droplets excreted by the cell being demonstrable not only toward the lumen of the gland, but also throughout the entire protoplasm. Toward the lumen of the gland the limitation of the cell is indistinct during lactation. Thus, for instance, we may observe in epithelia to which just excreted fat droplets still adhere that the limitation of the cell appears almost fringed; frequently small vacuolæ may also be seen in the cell in place of the excreted fat drops.

A second process takes place with beginning lactation in the nuclei of the epithelia—a process to which Niessen already called attention: we suddenly find very numerous cells with two or more nuclei; at the same time the individual epithelial cell becomes larger and projects into the lumen of the gland. It was impossible to discover how the division of

the nuclei is effected in the several epithelia. Mitoses were never demonstrable; it seems as if the division of the nuclei proceeds with extreme rapidity. At the same time we may observe that the nucleus of the individual epithelial cell which lies nearest the lumen is cast off with a portion of the protoplasm. The nuclei discoverable in the lumen show also distinct signs of a retrogressive metamorphosis (kariolysis) and seem to dissolve gradually.

A UTERUS WITH NUMEROUS SMALL CYSTS.

PFANNENSTIEL (Berlin) presented a uterus whose surface was studded with numerous cysts of ciliated epithelium. Here and there they are crowded as close as the eggs in the roe of a fish; they are the size of a poppy-seed or a little larger, and are situated exclusively on the surface of the organ; they only penetrate very slightly into the glossy, smooth peritoneal covering and the muscular layer. They look like the smallest peritoneal carcinomatous nodules, but prove to be cystic throughout and filled with clear watery fluid; the inner surface of the cysts is covered with a single layer of ciliated cylindrical epithelium. Similar cysts are also present on the surface of the left tube. Besides, on the right lateral surface of the uterus is a tubercle about the size of a hazelnut, which projects hemispherically, and on section is shown to contain from six to eight small cavities no larger than a pea embedded in a connective-tissue stroma. These cysts likewise resemble those described above. The author illustrated his investigations with microscopic sections of hardened pieces of the specimen. He then proceeded to the interpretation of this remarkable finding. The cysts have no connection with the ciliated epithelium of the endometrium, as proved by their entirely superficial position and the intact state of the muscular layer of the organ. A faulty embryonal development seems to be out of the question. Hence we are forced to assume a local origin of the cysts in the peritoneum. The peritoneal endothelium, however, in man cannot change into ciliated cylindrical epithelium. Therefore the latter must come from another organ. This the author has discovered to be the ovary, which (the left one, as the right could not be found in the specimen which was obtained by vaginal hysterectomy) shows very similar cysts on its surface. These are also invested with ciliated cylindrical epithelium. The speaker has repeatedly found such formations on the surface of ovaries and has learned to regard them as beginning neoplasms. In this respect he referred to a paper, now in press, on the origin of ciliated epithelial tumors of the ovary, and briefly mentioned the fact that in such cases the germinal

epithelium changes into ciliated epithelium, forms tubular depressions into the stroma, and leads to the formation of cysts. The speaker demonstrated the resemblance of the uterine and the ovarian cysts by microscopical preparations, and on the strength of his investigations he interpreted the uterine formations as metastases of the commencing neoplasm at the surface of the ovary. He was unable to state anything about the participation of the remaining (visceral and parietal) peritoneum in the metastasis, since the specimen had been obtained by vaginal hysterectomy, during which operation the peritoneum in general came into view only to a slight extent.

The uterus came from a woman aged 51; it shows considerable thickening of its muscular tissue and a hemorrhagic inflammation of the endometrium—processes which have no connection with the peculiar superficial formation.

(To be continued.)

ABSTRACTS.

1. EVERKE: THE TREATMENT OF POST-PARTUM HEMORRHAGE BY MEANS OF THE DÜHRSSEN UTERINE TAMPON (*Therap. Monatshefte*).—Post-partum hemorrhages are either due to lacerations of the vaginal mucous membrane and cervix, or else they arise from the uterine cavity when this organ does not contract firmly after expulsion of the fetus (atonia uteri). The hemorrhages of the first variety can always be controlled by sutures, but the cases of uterine atony in which no effect is produced by using ergotin, compression, or rubbing with the hand require other treatment. Dührssen's method of using the tampon is the surest, simplest, least dangerous, and most readily carried out of all the methods. The technique is as follows: The hair about the pubes is to be carefully scrubbed with soap and water, the vagina washed out with a thirty-per-cent solution of carbolic acid or a sublimate solution of one to one thousand. For tamponing we employ from three to six metres of ten-per-cent iodoform gauze, eight centimetres wide. The left hand grasps the uterus and presses it downward; then (when no speculum is employed) the gauze is pushed up through the cervical canal with the right hand (employing two fingers) to the

fundus. In a short time we feel a board-like contraction and the hemorrhage ceases. The tampon is removed at the end of twenty-four hours. The author explains the action of the tampon in this way: that the raw material produces an irritation of the uterine muscle, the contracting organ presses its walls firmly against the tampon, the lumen of the vessels becomes closed, and the hemorrhage ceases. (It is consequently not advisable to tampon the uterus too firmly.) The tampon may also be employed in cases of puerperal hemorrhage and in slight lacerations.

L. S. R.

2. RASUMOW: THE DIAGNOSIS OF CHANCRES OF THE CERVIX (*Moskau*, 1890).—The primary affection of the cervix appears in two varieties—as erosive and ulcerative, and deep chancres having sharply defined borders. The author claims that the diagnosis of primary syphilitic affection of the portio vaginalis is not as difficult as is claimed by most gynecologists. It is made evident by the presence of indolent, hard, and immovable glands in the inguinal region. Soft ulcers of the cervix may often be overlooked, being painless and manifesting no symptoms. Rarely an inguinal bubo develops in connection with a soft chancre of the portio vaginalis. L. S. R.

3. MERMANN (Mannheim): REPORT OF TWO HUNDRED BIRTHS WITHOUT ANY INTERNAL DISINFECTION (*Centralblatt für Gynäkologie*, 1891, No. 20).—M. reports two hundred cases, of which thirty-two were primiparæ and one hundred and sixty-eight multiparæ. One hundred and seventy-six of the cases were normal head presentations and twenty-four were abnormal. Three were cases of brow presentation, three breech, two transverse, three forceps, two twins; in one case premature labor was induced in the eighth month, the case being one of hydramnion, and twins were delivered by version. Two were cases of placenta previa; in both cases combined version was employed. In four cases the placenta, or a large piece of membrane, was removed from the interior of the uterus. There was one case of slight eclampsia. In one case a bougie was introduced and left in situ for twelve hours. In one case, in which there was a partial retroflexion of the gravid uterus (Veit), a bougie was introduced in the eighth month; a macerated fetus was extracted, and the membranes were found to be gangrenous. There was one case of macerated fetus, and one case in which there were severe symptoms due to a non-compensatory cardiac lesion. Not one death occurred in any of the two hundred cases, nor was there any marked infection in any of the cases. All of the women were discharged perfectly well, one on the eighteenth day, all the remainder before the fourteenth day. In all there were

eleven cases in which the temperature reached as high as 38° C. Of these eleven there were two in which there was an extra-genital affection. One was a case of articular rheumatism; the other a case of bronchitis, the patient being probably tuberculous. Of the nine remaining cases, four had a rise of temperature only once in the evening, four had a temperature up to 39° C. for from two to four days, and of these one patient discharged a piece of membrane on the fifth day. One had a Bartholinitis. This was opened and the fever disappeared. The next was a case of brow presentation; the child was born dead. The patient had an evening temperature as high as 40° C., this lasting from the fifth to the fifteenth day. The patient was discharged cured on the eighteenth day. The last case was one in which there was a macerated fetus in the eighth month, breech presentation, and syphilitic placenta which was removed piecemeal from the uterus. The patient had a chill and temperature before the confinement; after it temperature as high as 38.6° C. up till the seventh day. She was discharged on the tenth day. The case was one of pure ptomaine intoxication. A conjunctivitis occurred in only one of the children, although the eyes of the children are merely washed with distilled water.

M. gives the following etiological factors in the production of a puerperal infection:

1. External infection, caused by pathogenic cocci. This can be prevented by subjective antiseptics.

2. Auto-infection as understood by Semmelweiss. Divided into (a) ptomaine intoxication or putrid infection caused by micro-organisms. It cannot be prevented and vaginal injections are useless. (b) Pathological germs which have been lying dormant and are brought into action by the birth. These we find in cases of old exudations, pyo-salpingitis, and old abscesses of the glands of Bartholin. In these cases vaginal injections are also useless.

3. Vaginal infection caused by pathogenic germs which have found their way into the vagina before the labor began.

We can, therefore, speak generally of two varieties of infection, auto-infection and vaginal infection.

LEONARD S. RAU.

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ORIGINAL COMMUNICATIONS.

THE SURGICAL TREATMENT OF RETROVERSION AND
PROLAPSUS OF THE UTERUS.

BY

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EVERY gynecologist has doubtless met with a certain number of cases of retroversion and retroflexion of the uterus in which the old method of treatment by replacement and retention with a pessary has failed; the uterus either persisting in returning to its abnormal position, or the patient being unable to bear the pressure of such supporters as succeeded in keeping it in place. The cause of failure in such cases was usually due to several factors: first, the size of the uterus and the aggravated character of the displacement; and, second and chiefly, the removal of the natural supports of the organ by injury during parturition or by want of tone. In such cases there was not only a retroversion or a retroflexion, or both, but also a certain amount of prolapsus, the whole organ being lower in the pelvis, and in addition the peri-

neum and posterior vaginal wall were either torn or so much relaxed from overdistention and subinvolution as to be practically useless as supporters of the uterus. As a result, the ordinary lever pessaries employed for this displacement with so much benefit in the majority of cases were not retained or caused pain, and after many failures finally were of necessity entirely discarded. An exception to this statement might be made in favor of large ring or solid round pessaries, which would elevate the whole uterus in the pelvic cavity without restoring and retaining it in its natural anteverted position. The use of these latter instruments is in my opinion unscientific and illogical, since they do not perform what a well-fitting pessary should do. Hence I never employ them in simple backward displacement, limiting their use to occasional instances of prolapsus. Now, failing to find a properly fitting and satisfactory pessary for these intractable cases of retroversion and prolapsus, what remains for us to do? Manifestly either to give up the case and acknowledge ourselves vanquished, and allow the patient to pass the rest of her days unrelieved, or else see what surgery can offer us for the benefit and possible cure of this displacement. I take it for granted, of course, that it is generally admitted that a retroversion or a retroflexion, especially if associated with the absence or relaxation of the lower uterine supports which induces prolapsus, is a condition producing certain pathological symptoms and calling for treatment. I am aware that some authorities contend that a mere retroversion is of no consequence and in itself produces no symptoms and requires no treatment; but I maintain that the cases in which the conditions exist which I have described, and where mechanical supports fail, do produce most decided symptoms, and, indeed, inconvenience the patients so much as to lead them to seek relief, even at the risk of considerable pain, discomfort, and expense. Besides, in a certain number of cases where pessaries can be satisfactorily adjusted and borne, the patients, being obliged to wear such an instrument for a large part of their lives, demand some other means of treatment which will cure them without the aid of a pessary.

I have long ago, in an article read before the International Medical Congress in London in 1881, on the curability of

uterine displacements,¹ stated the results of my experience with numerous cases of all forms of dislocation of the uterus, my final conclusions being that but very few old displacements are cured permanently by pessaries, no matter how well applied or how long worn. In common, therefore, with many of my predecessors and contemporaries in this line of practice, I have been compelled to seek for other than mere palliative means for the relief of the cases under consideration. I will not weary my readers by detailing many different procedures which have been successively devised and as speedily dropped by gynecological surgeons in this country and abroad. I will merely mention several, in order to show the principles upon which the different operators worked. I must begin by stating that, as a rule, the cases which were sought to be cured by operative means were those in which the uterus and the appendages were freely movable and could be restored, by very slight manipulation, temporarily to their normal position. Adhesion of the fundus uteri and appendages to the bottom of Douglas' pouch presents a complication for which only one form of operation, hereafter to be described, is applicable.

There were four chief methods adopted to attain the same object of elevating and retaining in normal position the body of the uterus :

1. *The Anteversion of the Uterus by attaching the Cervix to the Posterior Vaginal Vault.*—This is technically the most simple and least dangerous method, and theoretically would appear to be quite feasible and effective. The late Dr. James B. Hunter, Dr. Herrick of Michigan, and doubtless others, have recommended this plan, but it has failed to secure a firm footing, chiefly because it did not stand the test of time, the attachment of the cervix gradually becoming lengthened or severed, and the cervix again slipping upward against the anterior vaginal wall, and of course the fundus dropping back into its original position. The addition of posterior colporrhaphy and perineorrhaphy, in case these organs required restoration, while relieving the descensus of the uterus, failed to retain it permanently in its normal

¹ AMERICAN JOURNAL OF OBSTETRICS, October, 1881.

position; hence I do not believe that this operation is still performed.

2. *The Method of Schücking*, which consists in passing a canula armed with a ligature into the uterine cavity, forcing it through the fundus and out into the vagina between uterus and bladder. The two ends of the ligature are then tied and the uterus thus kept in an anteflexed position until sufficient adhesive inflammation in the walls has been excited to insure its retention, when the ligature is cut and removed. Schücking claims excellent results in quite a large number of cases, and even reports the cure of aggravated prolapse by this operation. He has found some followers, but the operation can hardly be said as yet to have become established. It is certainly very ingenious in conception, but I should think the danger of wounding the bladder, which would seem almost unavoidable in some instances, might rob it of its usefulness and popularity.

3. *The Elevation and Anteversion of the Uterus by Shortening the Round Ligaments*.—This is commonly known as the operation of Alexander, who undoubtedly evolved it independently, although it had previously been recommended and its feasibility demonstrated on the cadaver by Aran, Alquié, and Adams. This operation has now become so well known that I need not go into any particulars as to the technique of its performance. I will merely say that the objection to it which was formerly advanced by myself and others, and is still upheld by some unsuccessful operators—namely, that it was not always possible to find the ligaments—has disappeared after a more mature experience; but the other objection, that the ligaments may not always be found strong and thick enough to retain the elevated uterus, still holds good; and, unfortunately, I know of no means by which the size of the ligaments can be foretold before the inguinal canal is opened, neither can we know beforehand whether they run easily in their sheaths or are so adherent as to be practically useless. Leaving aside this objection, there is still a considerable difference of opinion among gynecologists as to the value of the operation and the permanency of its results. Much of this doubt, in my opinion, is due to the improper selection of the cases, some operators having attempted

to elevate the *adherent* fundus uteri by drawing on the round ligaments. If they did so at all, they succeeded only by elevating with the uterus the rectum to which it was attached. The traction on the newly attached ligaments, of course, was too strong, and gradually they were either torn loose or stretched, and uterus and rectum returned again to the bottom of the pelvic cavity. The failure of the operation under such circumstances depended manifestly, not upon the operation, but upon its performance under improper conditions. Further, many operators failed to keep track of their cases, and were therefore not able to answer the question whether the results had been permanent or not. It was, therefore, easy for those who had failed to find the ligaments, or who had operated on unsuitable cases, to infer that the operations of those surgeons who had succeeded had eventually proved failures, in that the uterus had gradually returned to its abnormal position. I am not disposed to be an enthusiastic advocate of Alexander's operation and to use it as frequently as some of the gentlemen who have reported their results. In a fairly large experience with displacements of all kinds, I have felt justified in performing this operation only thirty-seven times, beginning with the autumn of 1884 and concluding with a few weeks ago. I believe I was the first to undertake this operation on this side of the Atlantic, and had no trouble in that case in finding and drawing out the ligaments. Partly through the kindness of some of my friends who have seen a number of my cases for a variable length of time after the operation, and partly from my own knowledge, I am entitled to state positively that in not one of the cases of backward displacement of the uterus did the organ return to its retroverted condition. In the few instances where I performed the operation for complete prolapse of uterus and vagina, I cannot report equally permanent results. Four of my patients subsequently conceived, carried their children to term, were safely delivered, and the uterus was found retained in the position in which I had placed it by the operation. I do not deny that I have always employed for several months an ordinary lever or ring pessary in order to prevent too early traction upon the newly attached ligaments. This I considered a wise and proper precaution. Finally, in none

of my cases has there been any unpleasant reaction from the traumatism, and when I began to discard the bone drainage tube and hermetically sealed the wound with iodoform and tannin-collodion there was no more suppuration after the operation. In properly selected cases (retroversion and retroflexion with more or less descensus and relaxation of the upper and lower uterine supports, with perfectly movable body of the uterus and appendages and no enlargement of either) I consider the operation of shortening the round ligaments to be the best, most permanent, and least dangerous of all those which have been recommended, and I base this statement on what I consider my own ample personal experience.

A substitute for the shortening of the round ligaments by opening the inguinal canal has been devised by Wylie, Dudley, Polk, and Mann, who perform laparotomy, double up the round ligaments on themselves or bring them together in front of the uterus, and attach them in these positions with stitches. Ingenious as these operations are, they seem to me to have the one great disadvantage of the only remaining method to be described, namely, the danger which must inevitably always cling to the opening of the peritoneal cavity, no matter how small that danger is at the present day. Besides, this intra-abdominal shortening of the round ligaments is still too new an operation to be compared with one which, like that of Alexander, has been performed many hundreds of times.

4. *The Attachment of the Fundus to the Anterior Abdominal Wall by means of Sutures.*—The first to publish a report of this operation, with cases, was Olshausen, of Halle, now professor at Berlin. He was rapidly followed by Sanger, Leopold, and others in Germany; by Howard Kelly, Thomas, Polk, myself, and others in this country. Long before Olshausen it had, however, been the custom of some ovariologists to sew the pedicle into the wound, either as a safeguard against possible secondary hemorrhage or in order to elevate the uterus which they found retroverted; but in such cases the ventral attachment of the organ was a secondary consideration to the removal of the tumor for which the operation was performed. To the gentlemen whose names I

have mentioned, together with others who have followed in their footsteps, is due the credit for having intentionally devised and performed the operation of laparotomy with a view of lifting up and attaching the displaced body of the uterus to the anterior abdominal wall. The technique of the operation differed more or less, according to the operator; one gentleman passing only one suture through the fundus uteri, another two or three, and another again scraping the surface of the fundus raw with his knife so as to increase the chances of attachment to the adjacent peritoneum. The location of the sutures also varied with different operators, and several finally have endeavored to simplify the operation and render it less dangerous by introducing the sutures through the abdominal walls into the body of the uterus without opening the peritoneal cavity. One of the latest of these is Dr. Krug, of New York, who claims that, by elevating the pelvis of the patient and operating in what is now known as Trendelenburg's position, the intestines are made to slip away from the pelvic cavity and the danger of including a coil in the sutures is entirely done away with.

The indications for this operation, which is known as ventrofixation, hysteropexy, or hysterorrhaphy (the latter name having been given it by Kelly), are precisely the same as those which I have already stated as calling for the operative cure of retroversion; but there is an additional indication which does not apply to the other methods of operation, namely, adhesion and disease of the appendages. Whenever the uterine appendages are so diseased by inflammation as to have become adherent to the bottom of Douglas' pouch, whether the uterus be retroverted and adherent at the same time or not, the question of the propriety and justifiability of removing the appendages has to be considered. This, of course, can be done only by laparotomy, and the appendages must be detached and brought up into the abdominal incision in order to permit the ligation of their pedicles and their removal. Of course the uterus, if adherent, will be loosened at the same time and brought up with the appendages. It is therefore but one step to attach the stumps of the pedicles between the lips of the incision and to add the slight manoeuvre of passing one or more of the abdominal sutures through

the fundus uteri. The propriety of ventral fixation of the body of the uterus under these circumstances—that is, when the diseased appendages are being removed—admits of no question. But as regards the justifiability of subjecting the patient to the danger of opening the peritoneal cavity and stitching the uterus to the anterior abdominal wall, merely for the cure of a comparatively trifling affection which in no wise ever will do more than inconvenience her, but under no circumstances endangers or shortens life, there still may be a very great difference of opinion. In all probability the success which an operator has had with his laparatomies—that is, the very small mortality which he has been so fortunate as to meet with—will aid largely in deciding him in favor of this operation. Other operators, however, who have been so unfortunate as to lose comparatively simple cases from peritonitis, intestinal occlusion, or septicemia, will not feel quite so ready to subject patients with retroversion and prolapsus to the risks of a laparotomy. An additional reason for conservatism in performing the operation of hysterorrhaphy is that the attachment of the fundus to the abdominal wall is not always permanent, and that cases have been reported where the displacement eventually returned in its old degree.

I myself have performed five hysterorrhaphies for retroversion of the adherent uterus with diseased and adherent appendages, all within the last three years. Of these I have lost none, and I may say that the results, so far as I know, have been permanent, even in the case of one patient who became pregnant and was seen by me on several occasions until she aborted at the end of the fourth month, probably in consequence of the impossibility of the uterus rising above the point of artificial attachment; and for this class of cases I therefore am an unqualified supporter of the operation. When, however, the uterus and appendages are movable and it is not necessary to remove the latter, I am quite as emphatically opposed to opening the abdominal cavity and would always prefer Alexander's operation. In case the vaginal walls were relaxed and prolapsed or the perineum torn or relaxed, I should always think it my duty to add to Alexander's operation the operations for narrowing the anterior and posterior vaginal walls known as those of Stolz and Hegar

respectively, or of restoring the perineum, if that alone is injured, by the flap-splitting method, performing all these operations in one sitting. Should the cervix be lacerated I would, of course, repair it before doing the Alexander.

Thus far I have spoken entirely of backward displacements of the uterus with more or less prolapsus; I have still to refer to the aggravated forms of prolapsus of the uterus and vagina which we find difficult or impossible to remedy by mechanical supporters and which are practically incurable except by a combination of operations. If I can make a woman fairly comfortable with astringent tampons or a large disc pessary of glass or hard rubber, or even by one of the numerous cup-shaped and T-bandage supporters, I have seldom found myself disposed to subject her to the operative cure of her displacement; particularly does this remark apply to women beyond the age of the menopause, in whom, besides, the tissues are no longer as capable of being restored to their normal tone as in younger women. Some patients, of course, have insisted upon being operated upon, not wishing to be compelled to wear troublesome and filthy supporters for the rest of their lives, and naturally I have felt compelled to accede to their demands; but unfortunately there will always be a certain number of cases of complete prolapse in which no pessary can be borne, in which the steady insertion of astringent tampons becomes so monotonous and troublesome that the women soon give it up, and in which the comparative youth of the patient and her desire to entirely regain her health induce us to try all operative means at our disposal for her permanent cure. My practice in such cases was, in former years, to proceed in the following manner and by the following steps: If the cervix was lacerated the tear was repaired, usually with catgut sutures; the uterus then being replaced within the pelvic cavity, the anterior and posterior vaginal walls were narrowed by the Stolz and Hegar operations, the latter of which, if carried sufficiently high on the labia, also lifts up the perineum and narrows the vaginal orifice to any desired degree. Immediately, and for some months perhaps after the operation, the uterus would be retained in the pelvic cavity and the vaginal calibre would remain undilated; but sooner or later, under the same influ-

ences of straining and forcing, the cicatrices would stretch and gradually the prolapsus return. Therefore, after I had performed a number of Alexander's operations, I added it to the others mentioned, performing first trachelorrhaphy, then Alexander's, third anterior, and fourth posterior colporrhaphy. If I remember correctly, I have thus operated on three or four cases of prolapsus, and I believe that the addition of shortening the round ligaments aided in keeping the uterus up and in making the results decidedly more permanent. Still I confess to having had one failure to my knowledge. I am, therefore, not as well satisfied with the results of Alexander's operation for prolapsus as I have had cause to be for retroversion. The reason probably is the usually large size and weight of the prolapsed uterus; hence, when trachelorrhaphy cannot be performed I find myself induced to give it a trial, my first attempt having been unintentional. On the 20th of February, 1889, I intended to operate on a very large prolapsus uteri et vaginæ by the combination of operations just described. After repairing the lacerated cervix, I inserted a sound into the uterus in order to elevate the fundus as far as possible, with the object of seeing how near I could bring it to the anterior abdominal wall. No special force was used, but the sound slipped through the uterine tissue and entered the abdominal cavity. I then performed abdominal section, saw the perforation made by the sound, and stitched the perforated fundus to the anterior abdominal wall, completing the sitting by anterior and posterior colporrhaphy. Subsequently I performed two more such operations on May 1st and on June 26th, 1889. My first and second cases recovered, but, I am sorry to say, the first presented herself at the Polyclinic about a year afterward with her prolapsus returned in very nearly as high a degree as before. The fundus was still attached to the abdominal wall, but both together had become inverted and there was a funnel-shaped depression at the site of the incision. My third case, after what I considered a perfectly easy and safe operation, developed tympanites, which increased to such an extent that the patient's respiration became impeded and vomiting was induced. By no means was it possible to produce peristaltic action and evacuate the bowels, and on the fourth day, having rapidly

become quite cyanotic, she died suddenly, apparently from heart failure. The post-mortem showed nothing abnormal in the abdominal cavity except enormous distention of the intestines. She was a stout, flabby woman, and undoubtedly had a fatty heart. Still, if I had not operated on her she might be alive to-day, and I confess that this unfortunate occurrence considerably dampened my ardor for dangerous operations as a relief for non-dangerous pathological conditions.

Müller, of Berne, who was one of the first advocates of hysteropexy for prolapsus, has had similar results both as regards the return of the prolapsus and death from the operation, and is no longer as enthusiastic in its support as he formerly was. I confess that the ideal operation for prolapsus uteri still seems to me to be a thing of the future. I certainly do not consider the complete extirpation of the prolapsed uterus, as performed by a number of operators at present, to be the ideal operation for that condition.

In certain cases of decided hypertrophy of the cervix and of the prolapsed vaginal walls, I have been very successful in curing the prolapsus by the following method: Making a circular incision around the margin of the external os, I have pushed up the vaginal walls with my finger and a scalpel handle, and thus removed the bladder and rectum, as well as the peritoneum of Douglas' pouch, from the seat of operation, and, having exposed an inch to an inch and a half of the raw cervix, I have amputated it close to the vaginal attachment by means of the galvano-cautery wire. Passing a tent of iodoform gauze into the cervical canal to prevent closure of that passage, I have returned the uterus into the pelvic cavity and packed the vagina with iodoform gauze. The cicatricial contraction of the vaginal vault following this operation has resulted in forming so firm an attachment that the uterus was retained in its normal position. Of course the removal of so much of the lower portion of the organ produced not only an immediate diminution in weight, but also an ultimate decrease in size by involution; and hence what was formerly a heavy, bulky organ was now but half or less that size, and therefore more easily retained in place. Evidently this operation is applicable only to women

who are beyond the child-bearing period, or who are absolutely incurable by any of the conservative methods; hence it does not apply to the cases in which the combined operations above mentioned or hysteropexy are indicated.

It has not been my object in this very cursory paper to go into any details of the operations described. My critics will, therefore, please to remember that very much more might be said on these subjects, and many mooted points of detail discussed, on which possibly they and I might agree or quite as possibly be of different opinion. The object of this paper is merely to report my own experience and opinions and evoke a discussion of the subject.

CASES OF EXTRA-UTERINE PREGNANCY; ABDOMINAL SECTION; REMARKS UPON TREATMENT.¹

BY

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WE are now passing through what might be called the heroic age in the treatment of extra-uterine pregnancy. Where the lines that are to guide us will be finally laid down has not as yet been determined. Hence I do not consider it out of place to take up a few moments of your time in remarks upon a few recent cases. I will quote the history of the case from which this specimen was taken, as given in a letter from Dr. Ellen H. Heise, of Canton, Ill.:

"The patient is Mrs. Charles M., wife of a well-to-do farmer. She has been an office patient of mine for two years. Had a tender ovary and sometimes dysmenorrhea. Occasionally menstruation has been delayed a week or ten days, at which times she always hoped she was pregnant. She is 33 years old, has a child 9 years of age, and has been sterile

¹ Read before the Chicago Gynecological Society, September 18th, 1891.

since its birth. She menstruated May 15th and missed the June period. July 12th she had a severe paroxysm of what she described as vesical tenesmus, which, after lasting a few hours, left her rather sore. July 20th another attack, and a second, on the same day, more severe than the other attacks. Dr. Sutton, of Canton, saw her and referred her to me. She had been cold, vomited, and felt faint. She came to my office in about a week, told me she had now menstruated again naturally, except that a thin piece of skin had come from the vagina (this was July 27th). The pain returned August 5th. She came to town the 8th and had another recurrence. She then complained of rectal tenesmus as much as the vesical, and I found the whole contents of pelvis so sore that I made no attempt to examine at that time. Later (the 13th) she had the severest attack. The pain was greatest in the region of the liver and transverse colon, and the shock was great. We found her faint and almost pulseless, pale, and cold. Next day she had a temperature of 102° F., pulse 140, respiration 32. Abdomen swollen and tympanitic. Bowels have been regular, but micturition and defecation painful. Complains as if foreign body was in rectum. I introduced my finger and found a soft, roundish mass in front of rectum, which I concluded was a hematocele due to extra-uterine pregnancy. There was a moderate flow the third day after this, painless. The breasts have been tender, areola darker, dark lines in the linea alba from the umbilicus. Waist measure now twenty-eight inches, which has been twenty-four. There was nausea during June. Her fever only lasted three days, the soreness has subsided, and she is in good condition. To-day (September 2d), however, a flow has again started, about like a menstrual flow."

I arrived in Canton September 8th, and upon examining the patient found some fulness and dulness over lower half of abdomen. The cul-de-sac and pelvis seemed filled with a soft, intraperitoneal hematocele. We opened the abdomen, and, upon introducing the fingers, let out a small quantity of bloody serum, and came upon an abundance of intestinal and omental adhesions. The right Fallopian tube entered a soft, dark-colored mass, about an inch from the uterine horn. The mass filled the left and posterior portions of the pelvic cav-

ity, from which it was enucleated. There was hemorrhage into the tube, into the fetal sac, and into the cul-de-sac of Douglas. The blood was well organized, and it is probable that no more hemorrhage would have occurred. The other ovary was not disturbed except to separate a few frail adhesions. A drainage tube was left for thirty hours. The recovery has, so far, been a pleasant one. Flatus passed on the second day, after which the patient was comfortable.

In examining the specimen we notice one interesting fact, viz., while the fetal sac is still easily distinguishable, the fetus is all but lost in the clot. Indeed, I did not discover the fetus until it had soaked in alcohol for twenty-four hours, when it was sufficiently hardened to be separated. It was soft, of the same color as the clot, and about one and one-half inches long. Dr. Robert Dodds made the pathological examination, identifying the tissues microscopically.

Whether the fetus died early and the placenta went on developing, or whether the hemorrhage continued after the death of both fetus and placenta, or whether the later attacks were unaccompanied by hemorrhage and merely due to the disturbance of an intraperitoneal hemothecoele, is a matter of some doubt. I believe, however, that the last explanation is the right one.

In this case we have, on August 13th, three months after the regular menstrual period, an attack of "severe abdominal pain, faint and almost pulseless, pale and cold," temperature next day of 102° F., pulse 140, respiration 32. The fever lasted but three days. Here we have symptoms calling for an abdominal section, according to our later authorities, yet at the operation I found only about half a pint of organized blood, surrounded by intestinal adhesions and free from the danger of recurrent dangerous hemorrhage. I should also say that she had slight attacks of pain and uterine hemorrhages after this severest one and up to the time of the operation. I find the explanation of these attacks, not in the increasing development of the fetus or recurrence of hemorrhages, but in sudden attacks of localized peritonitis due to getting up and going about after the acute attack had subsided somewhat. She was going about the house when I arrived in Canton. If there is one thing above all others

that has been demonstrated to me over and over again in my experience, it is that recurrent uterine hemorrhage and local inflammatory reaction are brought about, in cases of pelvic hematocele, by the patient getting up and going about too soon after the effusion has taken place, or after one of the short localized acute attacks. In cases of recurring effusion the cause has often been the same; and I do not doubt that in cases of internal hemorrhage from extra-uterine pregnancy, the later and often the fatal hemorrhages are brought about by disturbances from without. I think there is but little doubt that the first considerable hemorrhage nearly always kills the fetus and but seldom kills the mother. The fetus dead, the hemorrhage stopped, what should bring it on again? Undoubtedly the same things that would start up fresh bleeding in any other part of the body, viz., disturbance of the parts by motion, pressure, physical exertion, causing increased heart action, etc.

I will briefly allude to a few experiences that have brought me to this way of thinking. At a recent meeting of this Society (April 17th, 1891) I reported the case of Mrs. G., for whom I performed abdominal section for extra-uterine pregnancy. Both Dr. Fenger and myself diagnosed a living fetus but a few days before the operation, yet I found the fetus macerated and not developed up to the time of supposed pregnancy. The activity of the symptoms had deceived both of us. Her attacks of pain, nausea, faintness, and uterine hemorrhages came after physical exertion, her worst one after a ride of several miles in the street cars, while spending the day with friends at the opposite end of town. Altogether six or eight ounces of blood had been effused. This same patient had an extra-uterine pregnancy several years before, with intraligamentous hematoma and passage of decidua, in which the uterine hemorrhages and pains recurred for weeks until I put her to bed and kept her there, when they finally subsided.

I was called about a year ago to assist Dr. Frank Cary in attending a case which we diagnosed as aborted extra-uterine pregnancy with large intraperitoneal hematocele. The paroxysms were severe, the shock profound, and the effect upon the patient marked. I noticed upon examination that the

mass of effusion, although soft, presented some resistance to the finger. The conditions for an abdominal section were unfavorable, so we kept her on her back for a number of days, not allowing her to move without assistance, and kept her in bed for some time. The paroxysms subsided permanently. Before that she would get up as soon as comfortable after each paroxysm, and bring on another attack by her exertions. The hematocele after a few weeks suppurated and was opened per vaginam by Dr. Cary. The patient recovered. This makes four cases coming under my observation in which there was no danger of hemorrhage, and therefore no indication for abdominal section on that ground. I have had several cases of hematocele which, according to my present experience, I consider to have been cases of aborted extra-uterine pregnancy. I have seen many cases in the practice of others, but have never seen a case ending fatally from hemorrhage without operation.

In looking over the records of laparotomy for extra-uterine pregnancy, I find that in a very great majority of the cases where rupture had taken place the amount of blood effused was not a dangerous one, the clots were quite firm, and subsequent hemorrhage would not have taken place without considerable disturbance. The faintness, nausea, and weak pulse came from the shock caused by a foreign body in the peritoneum more often than from the amount of blood effused.

From all this I have been led to believe that the danger of death from hemorrhage in extra-uterine pregnancy is very slight if the patient be kept quietly in bed for a long period.

The number of observed cases of extra-uterine pregnancy are greatly on the increase. Formerly we only discovered the fatal cases, while now we are discovering also those who get well; and when we have learned to diagnose all of those cases that get well, we will find that the death rate of all taken together is a small one. Extra-uterine pregnancy is again coming to be regarded as the cause of a large proportion of pelvic bloody effusions.

The question of treatment is one of great interest. While we are finding out that the great mass of them will get well without interference, we have learned, on the other hand, that we can easily cure nearly all of them by abdominal sec-

tion. There is a small class of cases in which the woman dies of internal hemorrhage unless relieved by operation. But how many of them would bleed to death were they put on their backs for a month, and not allowed to move about in bed without help for the first few days, it is difficult to determine. The other main source of danger is sepsis. Is this avoidable? I have noticed that pelvic bloody effusions are rapidly absorbed when the patient is kept quiet, but that, when the patient gets up too soon and too often, slight attacks of inflammatory reaction, often accompanied by metrorrhagia, occur, and of course often finally lead to suppuration. With the rest treatment many cases that suppurate would not; and when they do suppurate during the first half of pregnancy they are not usually fatal, for the abscess is generally localized in the pelvis and can be evacuated from below.

Now, if it shall be found that nearly all cases in which the fetus dies early get well, the destruction of the fetus by electricity will come into successful rivalry with laparotomy. Undoubtedly more cases will get well by having the fetus killed than by waiting for its destruction by hemorrhage.

Another interesting question is whether after the fourth month we should allow the fetus to go on to full term or not. Since there are not half a dozen cases on record in which both mother and child have lived after the operation, there can be but little excuse for him who would do this. The time has not yet come. The mother's chances in waiting until or after term are too poor. Whether we should kill the child by electricity and operate later, or operate at once, is a query that it would be difficult to answer. When we can, by symptoms and examination, determine whether or not the placenta can be safely removed, we will know which to do. When the placenta must be left in the peritoneal cavity, the danger of sepsis is of course greater after the abdomen has been opened, and it would be better to destroy the fetus and wait for the immature placenta to lose part or all of its vascularity. When the ovum is developed in an adventitious sac in the pelvic connective tissue, we need not wait so long as in the other case, for it can be left in the sac without so much danger, provided we can avoid hemorrhage from partial accidental separation. When the placenta can be safely removed, the operation in the later months is

always indicated; for if we kill the fetus and leave it there is still great danger of sepsis, and if we allow it to go on to full term the placenta becomes daily more difficult to manage.

During the ninth month an immediate laparotomy in the interests of the child would seem to be indicated, for it is liable to die at almost any time, and its presence is injurious if alive and dangerous if it die. According to Fenger's investigations, the danger of the death of the mother from sepsis is greater than from an immediate abdominal section at term.

I would say, then, that if we have a case of extra-uterine pregnancy in the early months, it would be safe to destroy the fetus by electricity, and keep the patient in bed until absorption has noticeably commenced. If rupture have occurred without serious hemorrhage, and a well-defined hematocele be discovered, we may put her to bed, diet her, keep her quiet, and wait, being at the same time ready for a laparotomy. If profuse repeated hemorrhages occur, it is safer to operate at once according to Tait's precepts. If development have gone on after the middle of pregnancy, either an immediate abdominal section is indicated, or feticide with operation later. In the ninth month, and at term, operate in the interests of the child, unless false labor have occurred. After that operate upon the appearance of the first evidence of sepsis.

I am aware that some of the views here expressed are not in accord with some of the latest teachings, but a few observations in cases of extra-uterine pregnancy, and quite a number in cases of pelvic hematocele, have seemed to me to justify me in offering them to you for criticism.

THE REMOTE RESULTS OF THE REMOVAL OF THE OVARIES AND TUBES.¹

BY

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It must be admitted in fairness that the removal of diseased ovaries and tubes is followed in very many cases by the

¹ Read before the Congress of American Physicians, Washington, D. C., September, 1891.

relief of local pain; that the removal of pus collections, whether in the tubes or ovaries, eliminates a source of danger to life; that, when properly performed, the dangers of the operation, *quoad vitam*, are small, not to be weighed for a moment against the terrors of chronic invalidism.

This statement purposely ignores the question as to how far, in cases of tubal and ovarian disease, laparotomy can be avoided, and equally good results be obtained by the healing influence of time and the procedures of minor gynecology, though incidentally I sometimes wonder whether the lofty contempt with which the minor gynecologist is regarded by the pelvic surgeon is fully warranted. At any rate, there is another side to the story—as for instance: Not long ago a young woman called upon me with a tale of suffering, of months of treatment in a private sanitarium, and of her visit to a noted specialist, who assured her that castration alone could afford her relief; yet the replacement of a retroflexed uterus and the introduction of a pessary caused her pains to disappear, and at the end of a week she wrote that, inasmuch as she was entirely well, she had concluded to go home.

Now let us suppose that salpingo-oöphorectomy had been successfully performed in this patient's case, what would have been the subsequent history, *i.e.*, what is the usual later history of cases of double oöphorectomy, where the operation has been skilfully performed and the recovery from the same has been speedy and complete? The central event is the cessation of the menses. This occurs, according to Glävecke's statistics, based upon those of Hegar, Wiedow, Tissier, Schmalfuss, and upon his own cases, in eighty-six per cent either at once or after a few recurrences of the monthly flow. Of the remaining fourteen per cent, in some there is a marked diminution in the amount of the discharge, and in others the continuance is attributable to an incomplete removal of the ovarian tissue, or to peripheral irritation from the ligated endings of the tubes, or finally to pathological conditions of the uterus or of the uterine mucous membrane.

In calling this the central event, I know I am treading upon

¹ Glävecke, "Körperliche und geistige Veränderungen in weiblichem Körper nach kunstlichen Verlüste der Ovarien," etc., *Arch. f. Gynäk.*, vol. xxxv., p. 12.

the sensibilities of those who regard the castration of women as a matter of light importance. I acknowledge that it is to a great extent a figure of speech. I mean by it to indicate that the woman has lost in the disappearance of the menses the most distinctive sign of sexual activity. At the same time the uterus diminishes in size, the vagina becomes narrow and shrunken, and its transverse ridges are effaced. In many instances the vaso-motor disturbances, such as the hot flushes and profuse perspirations, serve as efficient reminders that the climacteric due at 50 has been reached, let us say, at 26.

It is customary to try and weaken the force of this conclusion by insisting that the removal of the ovaries does not impair the genital sense. Reliable statistics upon this point are not easily obtained. At least so far as my experience goes, the subject is one which few women care to discuss. But enough evidence has been obtained to show that the sexual appetite is in some cases unimpaired, or it may even, for a time after the operation, be increased; that in others it is sensibly weakened, and in others again it is abolished altogether. Zweifel's¹ statistics on this point are instructive. In reports obtained from twenty-six cases, no change was observed in ten patients; in three the desire was weakened; in three it was lost; while ten of the women reported they had never had any.

For those who regard the preservation of the sexual appetite as compensation for the loss of other feminine functions, it is well to bear in mind that, while it may be true, as has been maintained, that the sexual instinct is in man the most powerful incentive to exertion, in woman it is in the main subservient to the faculty of reproduction.

The young woman who has been deprived of her ovaries cannot marry without an explanation. If objection on the score of mutilation is waived and there follows a Malthusian union, it is certain that as life advances both husband and wife will have to struggle against the sadness and depression incident to a childless old age. The despairing cry of Rachel can possibly be better appreciated by an association of physicians than by the great pelvic surgeon who, flushed with success,

¹ Zweifel, "Ueber Salpingo-oöphorectomie," Arch. f. Gynäk., vol. xxxix., p. 353.

proudly vaunts his one-hundred-and-something case without a single death.

It may be said that all this is irrelevant; that the women from whom the tubes and ovaries are removed are already sterile. I have taken care, however, that that should not be the case with the young woman who has served as my text.

There is a question, moreover, whether there is not an unnecessary degree of fatalism in the assumption that inflamed and thickened tubes involve always permanent sterility. The reasoning in cases of operation is purely deductive, as the removal of the appendages puts an end to observation.

To me a certain amount of doubt has been suggested by the following occurrence in my practice: The patient, when I first saw her some years ago, was a young woman of 17. She had suffered agonizing pains at monthly intervals, and was confined to the bed or couch for the greater part of the time. An examination revealed occlusion of the lower vagina. An opening was made, and a large amount of retained blood and clots was removed from the upper vagina and uterus. The latter had been converted into a sac. For a long time thereafter the tubes remained thickened and tender. This was especially marked on the left side, to which the fundus of the uterus was drawn by peritoneal adhesions. Salpingotomy was plainly indicated, and I should have performed that operation had I obtained the patient's consent. Finally, however, she married. My advice in the matter was not asked. Last June the young woman called upon me. She had been married a year, and was seven months pregnant. The thing was inconceivable, but it was a fact.

So far it has been argued only that castration is followed by the symptoms and changes due at the climacteric. That this price may be joyfully paid by even young women to purchase relief from constant suffering, I readily admit. But when relief has been obtained, I have found very few intelligent women who, under the shadow of the climacteric, have not needed renewed assurances that the same end could not have been obtained by more conservative measures. It is incumbent, therefore, on the operator to weigh this question carefully in advance, that he may not only give the required

assurances, but that he may be able in so doing at the same time to retain his self-respect.

In my opinion most cases of tubal swelling yield to unheroic treatment. It is futile to claim that all will do so. For success patency of the tubal canal is necessary. Now, in a large number of cases where other means have failed, salpingotomy is capable of furnishing results that approximate to the marvellous. The enthusiasm of certain operators has this for a foundation. Because of the value of salpingotomy, its results should be subjected to the keenest scrutiny in order that its uncritical employment may not lead to its wholesale condemnation. This work cannot be accomplished by any individual. It must be the outgrowth of collective observation. Fortunately Mr. Tait has placed himself at the head of such a movement, and expresses his hope soon to publish an analysis of several hundred cases from his own unequalled practice. In a paper read during the present year before the Surgical Congress of Paris,¹ he admits the occasional occurrence of suppurating fistulous tracts, of fistulous communications with the bladder and intestines, of hemorrhages between the folds of the broad ligament, and that pelvic pains are not always relieved by the most carefully executed salpingotomy. This is wiser than the self-complacent attitude of some of his followers, who insist that all failures are the result of defective intelligence or are due to lack of operative skill.

With the views I have expressed with regard to the curability of many forms of tubal disease, my own operative experience has been comparatively limited. Still, during the last five years I find in my records of abdominal sections sixty-five cases where the uterine appendages were removed either for degeneration changes in the tubes or ovaries, or for the arrest of myomatous growths. I lost two of my patients. My statistics would have been better had it not been my misfortune to lose my sixty-fifth case.

After recovery from the operation a large number of the women treated have disappeared from sight; many have returned to express their gratitude for restored health; a few, alas! still remain upon my hands, a source of perplexity and

¹ L. Tait, "Sur les Résultats éloignés de l'Ablation des Annexes utérines," *Annales de Gynécologie*, April, 1891.

embarrassment. As months and years roll by there gets to be a hollow ring to one's assurances that it is all right, that the benefits of the operation have only been delayed.

As an example of this, I beg to be permitted to relate the following history:

Mrs. X., æt. 24. When I first saw her she was a chronic invalid. As she suffered from retroflexion, I first performed upon her Kelly's operation. The recovery was complicated by the formation of a sinus, which, however, healed after the expulsion of the silk ligatures employed in stitching the round ligaments to the peritoneal walls. Owing to persistent pains and profuse hemorrhages, a year ago I removed the ovaries and tubes. Great care was taken to make the excision complete, as it was thought desirable to arrest menstruation. The tubes were thickened and contained a considerable quantity of muco-pus. The organs in the pelvis and the contiguous intestines were matted together by adhesions due to chronic inflammation. The patient showed little disturbance from the operation. Nevertheless there has been no cessation of the menstrual hemorrhage and no improvement in her pelvic pains.

The reasons of failure or of retarded recovery have naturally been the subject of extended inquiry. For the most part, at least, the disappointing outcome appears to result from the incomplete removal of the appendages, from complications growing out of the operation, or because the morbid condition of the patient was not directly connected with the organs removed.

Hegar¹ enumerates as active factors in the causation of persistent pain: adhesion of the intestines to the stumps, irritation due to ligatures, and local inflammation of the peritoneal or of the pelvic connective tissue. These latter may be either the result of the operation or they may be exacerbation of a previous latent inflammation.

In two of my cases the patients have returned because of abdominal hernias, and have required a special operation for that infirmity. The consequences of this condition are, according to Hegar, diminution of intra-abdominal pressure,

¹ Hegar: "Der Zusammenhang der Geschlechtskrankheiten mit nervösen Leiden, etc." Stuttgart, 1885.

with abdominal and pelvic hyperemia involving the uterus likewise, meteorism of the intestines, and traction upon the suspensory ligaments of the chief abdominal viscera. If the opening is small, there is, in addition, a swelling of the protruded intestines, interference with the fetal circulation, and reciprocal pressure between the intestines and the abdominal opening, with a multitude of associated nervous symptoms.

Mr. Tait reports four cases in which, because of the continuance of pelvic pains after operations, he reopened the abdomen. In three he found a cyst had formed near the amputated extremity of one, and in the fourth of both tubes. This secondary trouble he supposes had its origin in the uterine portion of the tube, the direction of the dilatation outward having been determined, probably by the closure of the internal orifice.

In two cases of my own, in one of which two years, in the other five years, had passed after removal of both tubes for pyo-salpinx, I reopened the abdomen because of the patient's constant complainings. In neither was it possible to discover any hidden trouble. There were neither adhesions, nor thickenings of the tissues, nor cystic growth, nor disturbances caused by the ligatures. Though nothing was done except to explore and then close the incision, both women brightened up for a time and expressed a great sense of benefit from the operation—a benefit which, however, was of short duration. In these women it is more than likely that the intolerable pains complained of were hysterical in their nature. The term hysterical I use with reluctance, as one of the chiefest benefits derived from modern methods has been to remove from many women the stigma of hysteria, *i.e.*, it has been found in a large number of patients to whom the term “nervous” was formerly applied, and who were unceremoniously transferred from one hospital to another, the ailments are really dependent on reflex sources and respond to intelligent treatment.

The favorable results in many cases of seeming mental and moral perversity relieved by the exsection of diseased uterine appendages, has led to the trial of the operative removal of healthy pelvic organs for a variety of nervous derangements. As was to have been expected, the result has proved a failure.

In a few instances, contrary to my better judgment, I have operated in accordance with this indication, but I have never seen the slightest benefit accrue. The same wearisome experience has fallen to the lot of many of my colleagues. I am, therefore, tempted to assert that the performance of normal ovariectomy for epilepsy and insanity is to be regarded as hardly better than malpractice.

The extent and frequency of serious mental changes as a consequence of the removal of the uterine appendages is another question which calls for very careful investigation. One of my patients, operated upon five years ago, is now insane. I know nothing of her family history, but can state that she was not "queer" at the time of the operation. The recovery from the latter was uncomplicated and she left the hospital "cured." There is no trace now of pelvic trouble, but the pains have returned, and she now sits all day brooding upon the change that has taken place as regards her physical state.

The reports of operations as to the connection of castration with mental changes differ widely. Some go so far as to deny any connection between the two events, while Glävecke noted melancholia in eleven out of thirty-three patients in whose condition he was able to obtain accurate information. In the appended table, furnished me by Dr. C. C. Lee, which was compiled from carefully kept records, it will be seen that depression is noted in nine cases. In one instance at the end of a year, and in three at the end of two years, the patients recovered their wonted spirits. Two of the unimproved patients were epileptics. The experience of the neurologists, into whose hands this class eventually fall, is especially desired in regard to this question.

A review of the results of Mr. Tait's operation shows that, as a rule, the change of life is effected without unusual disturbances, without loss of womanly graces, and that the sexual appetite in many cases persists. On the other hand, in certain cases fistulæ, hernias, adhesions, local inflammations, and a variety of psychical changes complicate the issue. In some instances the relief is immediate; in many it is long delayed; in a few it never comes at all.

Dr. Lee's table, printed at the end of this paper, will be

found most instructive, not only because of the care with which he followed up the later histories of his patients, but because the histories were derived from an exceptionally intelligent class. It does not tell a very encouraging story.

The more the question is studied the more clear it becomes that the loss of her ovaries does make a difference to a woman. It is time to echo in this country Doléris' cry in France: "Too many useless mutilations; not enough conservative gynecology."

This is no discredit to Mr. Tait's operation. There will always be a field for its beneficial employment, and its author never intended it as a panacea for every feminine ailment.

At the risk of having the finger of scorn pointed at me, I do not hesitate to confess that in cases of enlarged and tender tubes I resort to rest, the vaginal tampon, douches, massage, faradism, and a tonic regimen. If the tubal swelling is intermittent and is associated with a narrow cervical canal, I am not afraid to use Goodell's dilator to secure free drainage of the uterine cavity. If the damming-up of secretions in the tubes is the result of adhesions, I try to break them up by combined manipulations according to Schultze's method, provided the tube sacs do not contain pus. If I am in doubt as regards this point, I employ an exploring needle passed upward through the vagina. I am in accord with Landau, Mundé, Grandin, and others, who maintain that one can often effect a cure in hydro-salpinx by the withdrawal of the fluid through the vagina; and in a pyo-salpinx which is near the vagina, I do not hesitate to open and drain from below. If, owing to the presence of a pus tube or of well-defined ovarian disease, or where, owing to uncertainty of diagnosis or failure of treatment, it is decided to open the abdomen, it will be well in future to consider the recommendations of Martin and of Polk, not in all cases to remove the entire organs, but to study in each case with care whether by removing simply the portion affected with disease it may not be possible at the same time to relieve pain and preserve the feminine functions.

It cannot be too often repeated that the successful removal of an organ is not a triumph of art, but a confession of defeat.

APPENDIX.—This table comprises only cases of abdominal section in which the uterine appendages were completely removed for causes other than tumor, and of which I have obtained frequent reports, so as to be sure of the after-condition of the patient until within the last six months. No laparotomies are included. About two-thirds were private patients and one-third hospital cases. The latest was done five years ago.

CHARLES C. LEE, M.D.

September 8th, 1891.

No.	Name, age, social state.	Date of operation.	Indications for operation.	Subsequent relief of local pain.	Secondary local effects of operation.	Effects on nervous system and on general health.	Effects on sexual appetite.	Resulting mental derangement.
1	L. V., 21, single.	April 26th, 1883.	Dysmenorrhea with epileptiform convulsions.	Partial for first year; after that complete.	Good in all respects	Convulsions have disappeared; general health is good.	Unknown...	None of any kind.
2	C. J., 35, married, 3 children	May 16th, 1883.	Chronic ovariitis; dysmenorrhea; constant pain.	Moderate for two years; since then quite good	Quite good after first year, during which menstruation continued.	General health good; no neurotic symptoms; has become very fat.	Unknown...	None; spirits good
3	H. C., 30, married, 5 children	June 8th, 1883.	Chronic peritonitis, with probable pyo-salpinx.	Very trifling for two years; since then complete	Generally beneficial. Some suffering from uterine prolapse.	General health slowly improved. No neurotic symptoms.	Unchanged; never very great.	None.
4	C. L., 24, single.	Oct. 6th, 1883.	Constant ovarian pain with chronic ovariitis.	Complete.....	None.....	Generally good; patient well.	Unknown...	None; patient seems happy.
5	E. M. B., 30, married 6 years, sterile.	Jan. 14th, 1884.	Dysmenorrhea with prolapsed ovaries; nervous prostration.	Very little for 18 months; since then considerable.	Gradual but incomplete improvement.	Tardy improvement of neurotic symptoms and of general health.	Diminished..	None, excepting slight discouragement at slow improvement.
6	M. H., 28, single.	March 8th, 1884.	Chronic ovariitis for 11 years; dysmenorrhea; general asthenia.	Incomplete, but since second year considerable.	Menstruation continued for two years, then stopped.	Very unsatisfactory; neurotic symptoms have continued.	Unknown...	Much mental depression at times, with insomnia.

Name, age, social state.	Date of operation.	Indications for operation.	Subsequent relief of local pain.	Secondary local effects of operation.	Effects on nervous system and on general health.	Effects on sexual appetite.	Resulting mental derangement.
7 E. M., 28, married, 3 children.	April 16th, 1884.	Dysmenorrhea; profuse menorrhagia; ovaries cystic; ill ten years.	Complete.....	Pelvic peritonitis for two months; after that none.	Generally good; patient keeps well.	Unchanged..	None of any kind.
8 A. S., 37, single.	April 28th, 1884.	Constant dragging pain in back; dysmenorrhea; ovarian prolapse; ill 10 years.	Partial for two years; recently much better.	Immediate cessation of menstruation.	Slight but steadily increasing improvement.	Unknown...	None of any kind.
9 B. B., 31, single, but has 2 children	May 13th, 1884.	Ill 2 years with salpingitis and intractable ovaritis.	Very marked, but with occasional relapses.	Menses ceased after two months; slight pelvic peritonitis.	Much improvement, but patient has become very fat.	Unchanged..	None; patient cheerful.
10 E. K., 20, single.	June 20th, 1884.	Constant flooding; abdominal pain; ovaritis; ovarian prolapse.	Complete.....	Slight pelvic peritonitis from rupture of a pyosalpinx.	Excellent in every way.	Unknown...	None of any kind.
11 C. W., 27, married, 3 children	Sept. 24th, 1884.	Pyosalpinx and ovaritis; intense dysmenorrhea.	Entire... ..	Much hemorrhage from adhesions; drainage; pelvic peritonitis.	Very little for two years; since then constantly better.	Diminished..	Depressed for two years; since then cheerful and well.
12 L. S., 25, single.	Oct. 5th, 1884.	Cystic and prolapsed ovaries; dysmenorrhea.	Partial only.....	Perimetritis with increased uterine prolapse.	Unsatisfactory; one year later I had to do a hysterorraphy.	Unknown...	Much mental depression from failure of first operation to relieve.
13 I. A., 22, married, 1 child.	Nov. 19th, 1884.	Chronic ovaritis; dysmenorrhea; very hysterical.	Incomplete for one year; since then entire.	Menstruation ceased after four months.	Excellent after lapse of one year.	Unchanged..	None of any kind.

14 M. B., 40, single.	Dec. 9th, 1884.	Cystic and pro-lapsed ovaries; constant pain.	Incomplete be-cause of result-ing cystitis.	None; six months later a cystitis de-veloped from cold and exposure only.	Marked improve-ment.	Unknown...	None, excepting hysterical de-pression during cystitis.
15 J. B., 30, single.	Jan. 10th, 1885.	Pyo salpinx and ad-herent retro-flexion of uterus; ten years ill.	Very gradual, but complete.	Improvement of all local conditions; operation with hysterorrhaphy.	No immediate ef-fect; gradual benefit after one year.	Unknown...	None of any kind; patient gene-rally well.
16 R. W., 23, single.	Mar. 18th, 1885.	Cirrhotic ovaries; prolapsed with constant pain; intense dysmen-orrhea.	Imperfect; pain recurs still at intervals.	Menstruation ceased in four months. None other.	Slight improve-ment in both, but imperfect.	Unknown...	Much mental de-pression at times.
17 C. G., 26, married, 2 children	May 16th, 1885.	Ill 7 years; double pyo-salpinx; dys-menorrhea; con-stant pain.	Partial for six months; after that complete.	Menstruation ceased; slight perimetritis.	Decided and steady improvement in both.	Unaffected...	None of any kind.
18 M. B., 45, single.	June 16th, 1885.	Ill 10 years; ova-ries cystic and adherent; great pelvic pain.	Very slow and imperfect.	Secondary hemor-rhage on second day; localized peritonitis.	Slight improve-ment after first year; never well.	Unknown...	Much discoura-ge-ment; has since had electrical treatment with-out avail.
19 J. L., 30, married, 1 child.	Sept. 22d, 1885.	Ill 3½ years; dys-menorrhea; ova-ries cystic and adherent.	Partial for six months; after that complete.	Menstruation ceased at once.	Much cerebral ful-ness; "flushing" for one year.	Diminished...	Intensely nervous and hysterical for one year; since then well.
20 E. E., 26, married, 1 child.	Oct. 14th, 1885.	Ill 3 years with ova-ritis; intense dys-menorrhea and pelvic pain.	Very slow, but complete in second year.	Secondary hemor-rhage from appa-rent hemorrhagic diathesis; trans-fusion.	Extremely slow but complete recov-ery.	Unchanged;	Much depression for first year; now quite bright.

No.	Name, age, social state.	Date of operation.	Indications for operation.	Subsequent relief of local pain.	Secondary local effects of operation.	Effects on nervous system and on general health.	Effects on sexual appetite.	Resulting mental derangement.
21	C. H., 32, single.	Nov 6th, 1885.	Ill 6 years; chronic ovaritis; dysmenorrhea; constant pain.	Complete after second month.	Menstruation lasted two months; slight local peritonitis.	Excellent in both.	Unknown...	None.
22	M. A. M., 31, married, 1 child.	Dec. 13th, 1885.	Dysmenorrhea; prolapsed ovaries; threatening insanity.	Pain intense for two or three months; then ceased.	Generally beneficial	Great temporary derangement; gradual cure.	Unchanged..	Much depression for two years; now quite well.
23	E. S., 19, single.	Jan. 4th, 1886.	Epileptic convulsions at menstrual period (only); chronic ovaritis for 2 years.	Slight for one year; after that complete.	None, except to force the menopause after second month.	No benefit of any kind; convulsions recurred as often.	Unknown...	Great depression at continuance of epilepsy; takes much bromide.
24	A. P., 31, married, 1 child.	Mar. 2d, 1886.	Ill 6 years; ovaritis; retroflexion of uterus; salpingitis.	Partial relief obtained very slowly; never complete.	Perimetritis; acute cystitis; vesical catarrh.	Operation inflicted serious shock on both; imperfect recovery.	Unknown...	Much depression for two years; spirits now good
25	J. E., 23, single.	Mar. 18th, 1886.	Ill 6 years; epilepsy; dysmenorrhea; ovaries cystic.	Complete after about six months.	Menses ceased at once; slight perimetritis.	Little or none; epileptic convulsions continue.	Unknown...	Considerable at times; derives a little help from bromides.
26	C. M., 40, married, 2 children	May 13th, 1886.	Ill 15 years; hemato salpinx; intense dysmenorrhea, etc.	Gradual for three months; after that complete	Menstruation ceased at third month.	Rapid benefit in both.	Unaffected..	None of any kind.

TUBO-OVARIAN CYSTS.

BY

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(With two illustrations.)

Definition.—A tubo-ovarian cyst is a cyst in which the tube and ovary *share* or participate in the formation of the sac.

The pathological process is not confined to either tube or ovary, but exists in both. The general pathological conditions which lead to a tubo-ovarian cyst are cystoid degeneration of the ovaries, endosalpingitis, and circumscribed peritonitis.

Etiology.—The causative factor is nearly always gonorrhea, though it may be initiated by the rotation of the tube on its axis, or the kinking of its walls so as to occlude the os uterinum. That these cysts may arise without being caused by gonorrhea is shown by the cyst from the sow (Fig. 1). I do not know that sows have gonorrhea. The accident of ovulation and menstruation coinciding also favors its inception. The subsequent process of the cyst formation is told in the story of inflammation.

Frequency.—Tubo-ovarian cysts are rare. Olshausen met with only three in three hundred ovariectomies. Winckel, who has a universal reputation in the pathology of the female pelvic organs, found only two tubo-ovarian cysts in over five hundred autopsies on female bodies. Schramm and Neelsen reported two in 1891. I have been present, as witness, assistant, or operator, in over two hundred laparotomies; for several years I paid careful attention to visceral anatomy in dissection, and also saw over two hundred autopsies. I have examined over two hundred and twenty-five sows, and have only seen the two tubo-ovarian cysts here described, one of

which is from a sow. The following have reported tubo-ovarian cysts: Richard, Labbé, Klob, Rokitansky, Hennig, Burnier, Blasius, Bandl, Lober, Veit, Hildebrandt, Olshausen, Boinett, Wells, Andersen, Schneidenmühl, Beauchamp, Winckel, Schramm, Reboul, and Tait. A few others have reported them, but the names here given show how rare such cysts are. It may also be stated that there are differences of opinion as to the real nature of a tubo-ovarian cyst. In addition to this, we are not certain as to its pathological origin. These confusions lend uncertainty to reports. So few men meet a tubo-ovarian cyst that their powers of recognition are limited in giving a report of actual existing conditions. The idea that an operator is dealing with a tubo-ovarian cyst springs on him unawares. Few have been so fortunate as Schramm, who diagnosed it long before operation, and confirmed it by laparotomy. Frankenhäuser claimed that he treated tubo-ovarian cysts several times. He did not confirm his diagnosis by laparotomy or autopsy, but depended on the periodic flow of bloody water to decide the nature of the trouble. Some may have doubts about such diagnoses. We shall soon learn that only those reports contain reliable news of the cyst where able diagnosticians foretold its existence in clinical observation, and where the trained pathological eye noticed all its relations and conditions at the laparotomy. We need more *studied* reports to reveal the natural, clinical, and pathological history of this cyst. Our studied material is yet too small to settle the story of its pathology. The single reports come from too many single observers to fit the general truth.

Fig. 1 in this article is a tubo-ovarian cyst from a sow. It is a typical case, as the ovary is almost entirely destroyed by gradual expansion. The expanded ovary forms the abdominal end of the cyst wall. A few atrophied ovarian follicles still remain, marked *c*; *b* shows what is left of the original ovary, and *a* points to the cyst itself. I cut the cyst away from the uterus at its junction with the tube *d*. The os uterinum was patent, as I could, by pressing the cyst, drive the fluid out of the tube drop by drop. By pressure on the fluid in the cyst one could see it travel through the convoluted tube, and by relieving pressure it would regurgitate into the cyst again. This cyst contained about five ounces of

straw-colored fluid. Its walls were pale and almost white. Blood vessels were distinctly seen coursing through its walls. All traces of tubal fimbriæ had disappeared. The plical folds of the tubal mucous membrane had disappeared from the ampulla, while many pale, normal-appearing folds existed in the isthmus. In fact, the tubal wall in the outer half was so stretched that no trace of longitudinal or circular muscular layers or mucous membrane was visible. One could only see peritoneum and a few connective-tissue fibres in the whole outer third of the tube. The isthmus, though dilated very much, was structurally intact. The absence of all traces

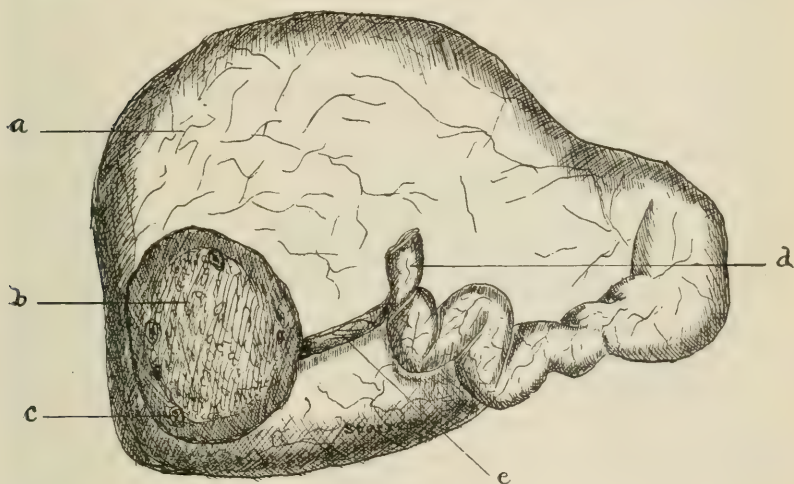


FIG 1.

of fimbriæ, as in this case, is the condition, no doubt, that has induced men to call such cysts congenital; but the evidence of such an origin is, in my opinion, insufficient for satisfactory proof.

The cyst is from a fat sow which appeared healthy. The examination of her uterus showed that she had borne pigs. There was a slight subinvolution. The large helicoid arteries had not quite retracted to normal. I have often observed cystic ovaries as much as ten times their normal size in sows, and have once seen a tubo-ovarian cyst in process of formation, with cystic ovaries and dilated abdominal end of the tube; but the whole of the circumference of the outer edge

of the fimbriæ was not adherent to the surface of the ovary, and so the fluid could leak into the peritoneum. Now, if more peritonitis arose, the remainder of the fimbriæ's circumference might become adherent to the ovarian surface, and a retention cyst would arise. The dilating cystic ovary directed into the tube might rupture and keep up the secretion. I think the cyst here figured arose from cystic ovaries and some circumscribed peritonitis during *rut*. A sow's rut is so intense in vascular congestion that it seems almost to pass the bounds of the physiological, and its climax might easily be mistaken for localized peritonitis. Around the outer end of the tube and ovary continuous pressure from the fluid in the tube had crushed out of existence the mucous membrane and muscular layers, so that the secretion must have been mainly kept up by the inner end of the tubal mucous membrane. No doubt when this tubo-ovarian cyst became overdilated the fluid trickled out of the os uterinum and relieved the tension. This could be proved merely by pressure after removing it from the uterus. It was a clear case of *hydrops tubæ profluens*. It appeared to be a case of long standing, as it showed a smooth surface and was free from adhesions.

Fig. 2 represents a tubo-ovarian cyst which Dr. Franklin H. Martin successfully removed from a woman and handed to me for detailed examination. Dr. Martin had diagnosed cyst of the right tube, and rather thought it would be pyosalpinx; but on opening the abdomen he came on this cyst, which held about three ounces of fluid. It had some adhesions, but was enucleated with little difficulty without rupture. On the left side there was severe salpingitis and pelvic peritonitis. The adhesions around the tubal end were dense, and the tube and ovary were removed with great difficulty. On more careful examination the tube of the left side showed endosalpingitis and salpingitis. Its walls were thick and swollen; old adhesions and exudates walled in the outer third of the tube, and it certainly looked like the result of an infective process which was without doubt of gonorrheal origin. The peritoneal thickening was very characteristic of gonorrheal salpingitis. The woman had complained of pain for two years, which was distinctly worse at menstruation, and she sought relief in operation. She had a distinct gonorrheal

history, and the condition of the left tube corroborated the diagnosis. One of the essential characteristics of gonorrheal salpingitis is that the inflammation invades the whole wall of the tube—mucous membrane, muscular layers, and even spreads to the cellular tissue. The head and front of tubal disease is gonorrhea, and gonorrheal infection has no *limit* to its invasive force. Though the home of gonorrheal disease is mucous membrane, yet it has no respect for other tissue, and there are no boundaries it will not cross. Most inflammatory conditions of the tubes will limit themselves and recover, but gonorrheal infection has no limit to its persistence, its course being marked by exacerbations and recurrences.

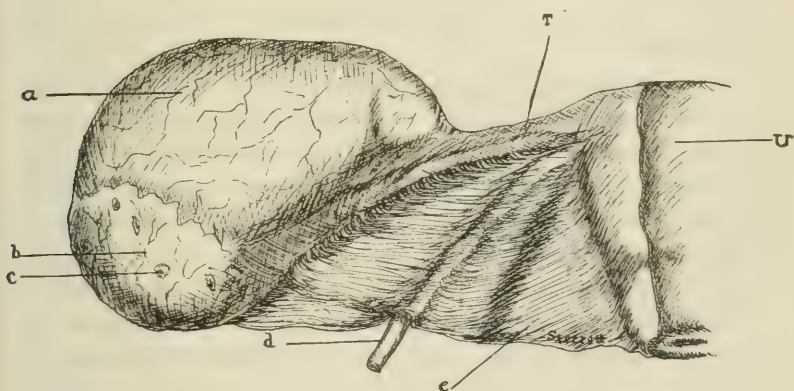


FIG. 2.

Gonorrheal salpingitis makes menstruation almost unbearable. It excites tubal peristalsis, and premenstrual pain is at its climax when the tubes begin to congest. The highest form of tubal colic can be seen in a woman with gonorrheal salpingitis.

The tubo-ovarian cyst was almost the exact retort shape of a stomach. The ovary forms a greater part of the cyst on its posterior than on its anterior wall, as shown in the cut: *a* points to the thin-walled cyst; *b*, to the spread-out ovary; *c*, to remnants of Graafian follicles; *d*, to the round ligament; *e* indicates the broad ligament.

The contents of the cyst were:

(a) Three ounces of a yellowish, limpid fluid.

(b) Epithelial cells; some few were ciliated. The cells were cylindrical, cubical, and flat.

(c) Crystals which were mostly of the plumstone shape. They were of a yellowish-brown color and not very numerous. They were probably hematoidin crystals, which indicated that blood had once existed in the cyst.

(d) It contained some thick, jelly-like substance which was transparent and resembled mucus. This must be what is called *hyaline* by some authors.

(e) There were sparsely scattered here and there on the internal surface of the cyst wall some pigment granules.

The fluid cleared when heated. On adding alcohol a white precipitate was momentarily formed, but immediately redissolved. Nitric acid threw down a permanent grayish-white paralbumen.

On opening up this cyst the internal surface was smooth over both ovary and tube. No tubal plicæ could be seen, except close up to the uterine end. No fimbriæ were visible. The tube was patent to the uterus, and no doubt the part of the tube embraced by the wall of the uterus, or the interstitial part, was also pervious. Under such conditions the tubo-ovarian cyst could empty itself when it became overdistended. As it became too full a periodic discharge would occur. It resembles an intermittent spring which periodically discharges its waters when its chambers become filled with water above a certain mark. In this case the valve formed by the mucous membrane or by the position of the tubal wall yielded to definite pressure. I could, by pressure on the cyst, drive the fluid out of the uterine end of the tube drop by drop. It was a clear case of *hydrops tubæ profluens* as well as a tubo-ovarian cyst. The marked trait about the cyst was the large share the ovary took in its formation. The ovarian tissue was dense, hard, and fibrous, and yet it was spread out like a shield to fill up the widely expanded abdominal end of the tube. There was no trace of tubal fimbriæ. No mucous membrane could be seen in the outer third of the tube, nor scarcely a trace of muscle fibre. Both muscle and mucous membrane had been crushed out of existence by persistent pressure of the fluid. By careful inspection one could see in places where the ovarian and tubal wall blended. It certainly showed long stand-

ing. This case did not show the slightest evidence that it arose from rotation of the tube on its axis; but it showed rather that ovarian activity was at the bottom of the persistent maintenance of the cyst, for it did not seem probable that the small amount of tubal mucous membrane left in the isthmus was capable of maintaining a cyst so large. Was it not due to undue activity of the glandular portion of the ovary? It must not be forgotten that we have *adenoma* arising in the ovary, and we cannot have an adenoma without pre-existing gland tissue. In cystic ovarian degeneration the glandular part of a Graafian follicle, no doubt, plays a large pathological rôle. It is not intended to convey the idea that every case of tubo-ovarian cyst is a *hydro-salpinx profluens*, but simply that the two in this article were, and that most of such cysts involve the ovary and tube.

The Diagnosis.—No man can diagnose tubo-ovarian cyst from hydro-salpinx, pyo-salpinx, hemato-salpinx, or even some cases of ectopic pregnancy, by bimanual examination. Positive clinical proof of periodic discharges of fluid from the vagina, and a shrinking of a tumor in the pelvis immediately after the discharge, is good proof of a *hydrops tubæ profluens*, and most tubo-ovarian cysts belong to such cases. Inferences like the above would strongly point to a tubo-ovarian cyst. But we may have a hydro-salpinx which can empty itself periodically into the uterus.

The Pathology.—As the recognition and treatment of any disease necessitates a knowledge of part or all of its morbid conditions, a few ideas on the pathology of tubo-ovarian cysts may not be amiss. I have noted elsewhere that the foundation of these cysts lay in abnormal ovulation, with inflammatory disturbances during menstruation; but I can state, without fear of successful contradiction, that ovulation and menstruation are not fully understood as to their mode of existence and relation to each other. Where views are unsettled, one man is entitled to an opinion equally with another. After the examination of quite a number of women and several hundred animals, I believe that ovulation is a progressive condition from before birth until the ovarian tissue is worn out. I can see no periodicity to it. I recently saw a woman of 70 ovulating. I do not believe it occurs once a month in woman.

We do not yet know the life history of a Graafian follicle. Menstruation is a periodic process. It belongs to the tubes and uterus. The process of menstruation in the uterus consists of the shedding of the *epithelium* of the body of the uterus and the upper parts of the utricular glands. Sometimes blood is discharged. The menstrual process in the tubes consists of *motion*—vermicular, peristaltic movements of the tubes. Menstruation begins with tubal motion. The most marked phenomenon in menstruation is, in my opinion, *tubal motion*. The cause of the motion of the tubes lies in the sympathetic nervous system; it is due to ganglia which are situated along the walls of the tubes and uterus, which I have called *automatic menstrual ganglia*. If a Graafian follicle is ready to rupture at menstruation, it may be carried down the tube; if it ruptures at any other time it will drop into the peritoneum and be absorbed.

To prove that gynecologists do not fully understand menstruation, one only needs to turn to three of the most modern text books on the subject. He will find in them the word *hyperemia*, which is to indicate a stage between normal and diseased appendages. Some frankly confess that it is impossible to distinguish between a hyperemic or congested tube and an inflamed or diseased tube. It seems that men are half-inclined to say that the menstrual, congested tube looks like disease. The fact will be impressed on any one who carefully examines several hundred tubes, in menstruation and especially in the rut of animals, that the congestion of menstruation and rut appears to pass the line of the physiological and enter the field of pathology. The transition of hyperemia into inflammation constitutes one factor in the origin of tubo-ovarian cyst. The idea of congenital origin of tubo-ovarian cysts is not sustained, so far as I can understand the matter. That idea involves either a malformation of the Wolffian body or a reversion to lower types of animals. It would be atavism. In some of the lower animals the oviduct acts as a true duct to the ovary. That suggests the idea of a gland (ovary) and a duct (Fallopian tube). The formation of a tubo-ovarian cyst in such a case would be an easy step. A slight inflammatory process would quickly make a retention cyst out of the gland and its duct. In the hen, where the oviduct is

continuous with the ovary, these cysts actually form. Sometimes the non-expelled accumulated eggs make a cyst or tumor. The eggs become caught in the upper part of the oviduct before calcification of the shell. In the pig the ovary lies in a large pouch of peritoneum, and the Fallopian tube opens directly into this pouch with its large funnel. The formation of a tubo-ovarian cyst would seem easy in the pig. In the dog the ovary lies in a pouch at the upper end of the tube, so that the ovary cannot easily be dislocated from the fimbria. So that in the hen, pig, and dog the ova drop right into a pouch at the upper end of the tube. They can scarcely escape in any other direction. But in man, the cow and other animals, the Fallopian tube is only fastened to the ovary by a small strip of muscle called the *fimbria ovarica*. In these animals, if the ovary and tube did not have some movement toward each other, it would be a very rare accident for an egg to drop into the funnel of the oviduct. This mechanism will, of course, wonderfully lessen the chances of reproduction in higher animals. Here we will call attention to the process of menstruation or rut in the formation of the tubo-ovarian cyst. In menstruation in man or rut in animals (the identity or difference of these two processes we will not now discuss), the fimbria ovarica shortens and draws the funnel of the tube on to the ovary. The tubal mouth approaches the ovarian surface at menstruation or rut. The tube has not the power of selecting a particular part of the ovarian surface where an egg may be ripe, but its funnel simply drops over it like an umbrella. By the time the mouth of the tube has spread over the surface of the ovary, menstruation or rut is at its climax. I have seen this twice in the open abdomen of woman, once very perfectly and once not so good. I have examined some two hundred and twenty-five sows, forty sheep, fifty cows, and many dogs, and have observed all conditions of rut in regard to the ovary and mouth of the tube. The cow and pig are the best to explain our object. At the climax of rut the mucous membrane of the fimbriated end of the tube lies in contact with the ovarian surface. The congestion is great, and between the ovarian surface and the mucous membrane of the fimbriated circumference of the tube a gluey, sticky mucus is secreted.

This glues or cements the circumference of the fimbriæ on to the surface of the ovary. Sometimes considerable force is required to detach the tube from the ovary; and as the mucous membrane of the funnel of the tube leaves the ovarian surface, one can see the gluey, sticky mucus drawn out into strings or fine threads. I observed in some cases this physiological process passed on to an inflammatory condition, and instead of mere agglutination between tube and ovary, new tissue was formed by cell proliferation, and distinct adhesion resulted. The union was so strong that the tissues would rupture before the original adhesion would separate.

The addition of inflammation at the circumference of the abdominal end of the tube during menstruation then counts as an essential factor in the origin of tubo-ovarian cysts. The other very essential factor is cystic degeneration of the ovary. It exists alike in man and in mammals. I found the most active cystic degeneration of the ovary in the pig, where it is very frequent. The requirement in the origin of the tubo-ovarian cyst is that, after the tubal fimbriæ have become adherent by their circumference to the ovarian surface, a cystic degeneration of an enclosed Graafian follicle or corpus luteum must arise. Cystic degeneration implies inflammation. The inflammation does not limit itself to the ovary alone, but extends to the tubal wall. When the ovarian follicle becomes enclosed inside the circumference of the adherent fimbriæ, it may become diseased. The follicle cyst or corpus luteum may continue its pathological process and finally rupture into the tube. By this time the inflammation has extended along the mucous membrane to the uterine end, which may become so swollen that it will not allow the tubal contents to escape, and so the accumulation gradually increases in the tube. Under higher pressure or subsidence of the endosalpingitis, part or all of the fluid may escape. The solid ovary will expand indefinitely until it becomes a mere shell, as in the two cases presented in Figs. 1 and 2. It was easy to observe in both these cases that the Graafian follicles gradually went out of existence as the ovarian tissue expanded, and that on the most stretched part of the ovary no follicles existed. The tube was dilated until mucous membrane and muscle were crushed and stretched out of existence.

One of the most puzzling points in a tubo-ovarian cyst is the pathological factor which continues and sustains its existence. In neither of the presented cases did it appear that the tubal mucous membrane was the especial factor, as the mucous membrane was largely destroyed from pressure and stretching. One is more apt to believe it must have been mainly continued by ovarian activity. By exactly what form of ovarian activity we cannot yet definitely settle, but probably the glandular part of the Graafian follicle assumed undue activity. The process of tubo-ovarian cyst formation is general and not local, as cases are reported where it was bilateral. No one who carefully examines a few cases of tubo-ovarian cysts will not say their formation is a complicated process. I think the process includes ovarian cystic degeneration, inflammation during menstruation, and endosalpingitis. Their slow origin and long continuance point to infective processes. Again, an inflammatory action may occur in the ampulla of the tube and secretions may accumulate in this segment. Mechanical or other accidents may occur, so that the tube may twist on its axis in such a manner as to occlude its lumen. The mere weight of accumulated fluids may induce the tube to rotate on its axis. Of course inflammation in the ampulla must be presupposed, because no secretions will collect in a tube open at its abdominal end. Hence the rotation of the tube on its axis is a secondary matter in the process. Recent operation on the kidney and investigation of hydronephrosis prove beyond question that hydronephrosis is often caused by rotation of the kidney on its ureter as an axis, the rotation continuing until the lumen of the ureter is occluded. I know one surgeon who had two typical cases of hydronephrosis caused in this way. It has been suggested that the tubo-ovarian cyst might arise in utero as a result of accessory ostia. The accessory ostium would open on the Wolffian body close to the ovary, and the circumference of this ostium would surround the ovary and become adherent to it in such a manner that the ovary would be as a gland and the Fallopian tube as its duct. Then a tubo-ovarian cyst would in some unexplained way result. I do not think this is yet proved. However, it is not necessary to presuppose the existence of accessory ostia, because it is

equally easy and reasonable to say that the ovary and end of Müller's duct were dislocated toward each other during the life of the peculiar Wolffian body. Then, accessory ostia will be found much more numerous than was formerly supposed; because since I began looking for accessory ostia and examining the tube while under water, I find them quite frequent, whereas before I searched for the ostium with the tube out of water, and did not find them so often. If it be of congenital origin it must arise out of some malformation of the Wolffian body. But so far I have seen no sufficient reasons for a congenital origin of tubo-ovarian cyst. Tubo-ovarian cyst must be looked on as a distinct clinical and pathological entity. It is a distinct morbid condition, having definite etiology and pathology. A remarkable point about the tubo-ovarian cyst from the woman was that the whole anterior side of the cyst, except the ovary, was so shiny and smooth that it could scarcely be other than the original peritoneal epithelium which had never been destroyed by disease. It must be acknowledged that the tubo-ovarian cyst is the result of a complicated process, which is well demonstrated by the variation of opinion of different but able pathologists. This woman's case showed that her disease was bilateral.

CONCLUSIONS.

1. Tubo-ovarian cysts, though very rare, are real entities in disease and distinct pathological conditions.
2. The tube and ovary both share in the cyst formation.
3. The accidental origin of the cyst lies in circumscribed inflammation of the tubal fimbriæ at menstruation.
4. The essential factors in originating tubo-ovarian cysts are: (*a*) cystic ovarian degeneration; (*b*) menstruation; (*c*) circumscribed inflammation at menstruation, which makes the circumference of the fimbriæ adherent to the ovarian surface; (*d*) the continuation of the follicular degeneration and rupture of its contents into the tube; (*e*) the arising of an endosalpingitis.
5. The accidental coincidence of the degenerating ovarian follicle being included within the circumference of the fimbriæ adherent to the ovarian surface must be taken into account.
6. The ovary appears to be the main factor in the pathology of the cyst formation.

7. The congenital origin of tubo-ovarian cysts has not offered sufficient proof to substantiate its claims. This theory would of course refer to some malformation of the Wolffian body. It would refer to accessory ostia, or, as I have suggested, to dislocation of the ovary or mouth of Müller's duct, so that the ovary might drop into the mouth of the duct so early in the life of the Wolffian body that the ovary would represent a gland and the Müller's tube its duct.

8. Most cases of tubo-ovarian cysts are probably cases of hydro-salpinx profluens.

9. The continued existence of the cyst and its secretions are likely maintained by the glandular part of the degenerated ovarian follicle assuming undue activity. It is an aborted attempt at the formation of an ovarian adenoma. The ovarian follicles in their mode of origin are glands. They are analogous to sebaceous cysts and arise as mucous cysts from the peritoneum. The membrana granulosa is the glandular portion of the follicle and that part which gives origin to the ovarian adenoma (because it contains glands).

10. So far evidence favors the supposition that most tubo-ovarian cysts are the result of a gonorrheal infection. However, it must be that which has induced first ovarian cystic degeneration; but the cyst from the sow shows that tubo-ovarian cysts can arise without gonorrhea.

11. The total disappearance of all traces of fimbriæ and muscle from the ampulla demonstrates that the case may be very slow and progressive.

12. A tubo-ovarian cyst may arise from occlusion of the uterine end of the tube by rotation on its axis after the fimbriated end had been closed and secretive accumulation had occurred, the rotation being induced by mere weight of the tubal contents. This would be similar to hydronephrosis from rotation of the kidney on its ureter with occlusion of its lumen.

13. Individuals with tubo-ovarian cysts are usually sterile.

14. The treatment should be extirpation or incision and drainage.

15. Attempting to mechanically force the fluid from the cyst is dangerous; it might rupture.

POTT'S DISEASE AND PREGNANCY.

BY

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THE subject naturally divides itself into two general parts—the effect of Pott's disease on pregnancy, and the effect of pregnancy on the Pott's disease.

The regions of the spine which are of interest to us from their relation to the gravid uterus are the lower dorsal, the lumbar, and the sacral. A kyphosis in the lower dorsal necessitates an increased inclination of the lower ribs to the pelvis, and in marked cases these sink deeply between the iliac crests. In the mid-lumbar region the deformity is not apt to be so marked—in fact, exceptional cases are seen here in which there is no curvature¹—but in the lumbo-sacral region the deformity is again greater, owing to the diminished inclination of the pelvis. Were it not for the compensatory curvatures these deformities would be even more marked.

In all these cases the abdominal cavity is diminished in its vertical diameter, and in the first instance also laterally from the pressure of the ribs. Furthermore, abscess usually complicates disease in these portions of the spine, and this may still further diminish the capacity of either the abdominal or pelvic cavity.²

In the pelvis, too, we find changes due to the spinal disease. A caries in very exceptional cases is still given as the cause of spondylolisthesis, and there seems to me no reason why disease of the lumbo-sacral junction could not produce this effect. The kyphotic pelvis is, however, the one we expect to find associated with Pott's disease, and I refer you to Winckel's "Text Book on Midwifery" for an excellent description of these changes.

¹ Percival Pott, vol. iii., page 473, ed. 1873.

² See case in Zweifel, "Lehrbuch der Geburtshilfe."

The great majority of cases of Pott's disease occur in children ; and the younger the patient, other things being equal, the greater the consequent pelvic changes, which have been proven by Breisky to be so largely due to the change in the direction in which the weight of the trunk is carried to the upper surface of the sacrum. Osteitis at the lumbo-sacral junction will produce atrophy of the growing bones involved just as elsewhere ; and erosion here will cause, by the compensatory lumbar lordosis above, a deformity like the pelvis obtecta, or even simulate a spondylolisthesis if of more severe degree. A kyphosis in the lumbar region will diminish the inclination of the pelvic plane, but in the dorsal will generally increase it from the compensatory lumbar lordosis. A lateral deviation will diminish the pelvic cavity on the side of the convexity.¹ Barbour has proven that the lower the spinal disease the greater is the increase in the conjugate diameter of the brim, but that the second characteristic feature of this pelvis—the contraction of the transverse diameter at the outlet—is not definitely related to this.²

In these cases of kyphotic pelvis only the voluntary forces of labor are much affected. These are impaired directly in proportion to the deformity on simple mechanical principles, and the obliquity of the uterine axis prevents the effective application of that strength which remains. The histories of these cases show that the delay usually occurs in the second stage. However, there are a considerable number of cases of labor in tabetic and paraplegic women reported, which prove that the assistance of the abdominal muscles is not absolutely necessary to the accomplishment in parturition in the absence of obstruction from deformity of the pelvis, or from resistant soft parts at the outlet.³

The essential involuntary muscles luckily cannot be much affected by disease of the spine, since, though the motor centre of the uterus has not been satisfactorily demonstrated yet, it has been located in the medulla (Winckel), in the hypogastric plexus (Frankenhäuser), in the brain or cord

¹ Parvin, "American System of Obstetrics," page 752.

² Barbour, "Spinal Deformity in Relation to Obstetrics."

³ Beneke, *Zeitsch. f. Geburts. u. Gynäk.*, i., 77, 28 ; Parvin, "American System of Obstetrics," vol. i., page 704 ; Farre, "Tanner on Pregnancy," page 337 ; Epley, *New York Medical Journal*, 1883, xxxvii., 233, etc., etc.

(Kehrer), and in the peritoneal coat of the uterus (Dembo), so that amid these conflicting opinions we must conclude that the uterus may be excited to contraction by the most varied peripheral and central influences, and that destruction of all its motor ganglia is well-nigh impossible, however marked the lesion.

To consider now the effect of pregnancy on the Pott's disease. The indication *par excellence* for treatment in Pott's disease is acknowledged by all to be the removal of the weight of the trunk from the bodies of the diseased vertebræ. The mechanical effect of a weight placed anteriorly is a most disastrous crushing together of these very vertebral bodies, already softened by disease and totally unable to sustain even the ordinary weight of the body. The probability of abscess formation, estimated at seventy per cent, in the lumbar region,¹ with all the danger that that involves, is therefore greatly increased by the weight alone of the gravid uterus. The danger of rupture of already existing abscess, or of precipitating pressure paralysis, is aggravated. Aside from this, also, during gestation a hyperemic condition of the cord and its membranes, and of the pelvis generally, is thought or known to exist,² and the effect of this on existing disease of the vertebræ must be pernicious. I would call attention also to the anatomical fact that new centres of ossification appear in the vertebræ at the age of 16 years and again at 21, indicating an unusual activity of the nutritive processes at these periods—a condition favorable to the onset of Pott's disease or for rekindling old inflammatory foci. This fact is important, as at this age marriage most often occurs.

Is it safe for a girl who has or has had Pott's disease in these locations to marry? To answer these questions I have studied the histories at St. Luke's Hospital and at the Sloane Maternity; Dr. Shaffer has also kindly placed the New York Orthopedic Dispensary records at my service, and I have received valuable aid from Drs. Partridge, Lusk, R. A. Murray, Coe, Garrigues, Gibney, and Tucker.

From the data at my disposal it appears that of the thirty-two married women observed ten *are known* to have died from

¹ Parker, British Medical Journal, January 12th, 1884.

² Hasse, "Krankheiten des Nerven-Apparates."

causes directly connected with the disease (two from operations necessitated by the contracted pelvis, three of phthisis, four from exhaustion from abscess, one from cerebro-spinal meningitis)—a mortality of thirty-one per cent, which is probably too small, as many of the histories are not complete; while of sixty-two other cases occurring in unmarried women over 16 years of age, but two *are known* to have died. While I do not think this shows the true ratio, I do believe it indicates a greater mortality among married women. I have collected twenty-four cases of labor occurring in fourteen *cured* cases of Pott's disease of the lower dorsal, lumbar, or sacral vertebræ, and find that *in no instance has there been a rekindling of the old disease*. The chief danger to the mother in these cured cases lies, therefore, in the malformations produced in the pelvis and abdomen, and in the great strain on a vitality already enfeebled. Indeed, Neidert¹ found that the cause of death in patients with severe deformity whose spinal disease had been cured was generally heart failure.

I have also notes on seven cases in which *active* Pott's disease complicated pregnancy (three dorsal, three dorso-lumbar, one unspecified). In six of these the pregnancy either originated or greatly increased the severity of the disease. In the remaining case, though an active stage of the spinal osteitis existed, pregnancy and parturition were peculiarly harmless under careful protective treatment, and the patient is to-day well.

On account of the great rarity of these cases I will give a brief outline of each.

CASE I.—Mrs. O. D., 22 years. Duration of disease, one year; location, ninth dorsal to second lumbar. Conception when disease had existed nine months. Child born at term; labor easy. Slight increase in pain for two weeks. Cured a few months later.

CASE II.—Mrs. M. J. R., 23 years. Duration of disease, four months; location, mid-dorsal. Fourth child born after disease had existed two weeks; labor easy. Died from rupture of abscess into esophagus two and a half years later, after having three attacks of paraplegia.

¹ Inaugural Address, Munich, 1886.

CASE III.—Mrs. M. D., 33 years. Duration of disease, fifteen months; dorso-lumbar region. Conception with onset of disease; instrumental delivery. Lumbar abscess followed; exhaustion, phthisis. Death in twenty-two months.

CASE IV.—Mrs. E. C., 24 years. Onset of disease with birth of second child; lower dorsal region. A third child, born nineteen months later, again prostrated mother greatly, and she died soon after, cause unknown.

CASE V.—Benicke case, 28 years. Mid-dorsal region. Disease began with last (tenth) pregnancy. Complete paraplegia had developed before gestation was completed. Labor of course painless, but otherwise normal. At last note patient was still completely paraplegic.

CASE VI.—Mrs. E. F. D. Lower dorsal. Married at 30 years. Disease developed with birth of first child, increased steadily. After second child, born seventeen months later, mother became paraplegic. Labors easy and at term. Gradual, slow recovery. Twenty-one years later remains cured.

CASE VII.—Mrs. R. Duration of disease, six years; lower dorsal. Third child born four and a half months after onset of disease; fourth sixteen months later; fifth three years after last. Great deal of pain during gestations; relieved soon after labor. Now tires easily, and at times has epigastric spinal pain.

Cases I. and VII. immediately followed severe traumatism, indicating fractures at the onset.

Dr. Shaffer has also given me an "intermediate" case of great interest. Mrs. W., 35 years. Duration of disease, ten years; location, seventh dorsal to third lumbar. There had been no symptoms for a year and a half, yet patient wore a brace still and felt she needed its support. Easy labor at term occurred, and no untoward symptoms in the spine resulted.

We have four points to consider in reference to treatment: Is the disease cured or progressive? Is the pelvis contracted or practically normal?

Cases of spinal caries come to us naturally as orthopedic surgeons, and we must remember that changes are caused in the pelvis by spinal disease at a distance, even in the lower dorsal region if it occurs during the period of active growth.

It is our part to make the diagnosis, as it is very important that these cases should be put into the obstetrician's hands at as early a period of gestation as possible, in order that abortion or premature labor may be induced if necessary.

In case the Pott's disease is cured, the amount of pelvic deformity will be our guide as to treatment. There can be no fixed rule in these cases—each must be judged by itself. The researches of Sulger-Buel demonstrate that normal birth often follows where measurements would indicate that it was impossible.¹ The maternal mortality Barbour found to be fifty-nine per cent in thirty-two cases, and Winckel found it sixty-six per cent in twenty-one case; yet neither of these observers speaks of active spinal disease complicating his cases, so I presume does not take this additional element of danger into account.

We are still confronted with the question, What will be the effect on the diseased vertebræ? My cases show very plainly that in *cured* cases no injury has been done; furthermore, none of the gentlemen I have referred to have ever seen in a single instance the tubercular process rekindled by the traumatism of labor.

On the other hand, the cases in which pregnancy complicated active disease of the spine tell no uncertain tale either, and in view of them I should advise the termination of pregnancy, in case the disease were active, at the earliest possible date in almost every case.

THE IMMEDIATE CLOSURE OF LACERATION OF THE CERVIX.

BY

H. J. GARRIGUES, M.D.,
New York.

ARTERIAL hemorrhage from the cervix is a rare occurrence, but sometimes it will occur, and is then a serious thing. A few months ago I had such a case, in which the patient came

¹ Arch. f. Gynäk., 1890.

very near losing her life. There had also been a laceration of the perineum due to the large size of the child. This I united with three sutures, and it took some time before I realized that there was a source of hemorrhage above the united perineum. Loath to sacrifice the work just done, I tried first hot-water injections, and then styptic injections with diluted liquor ferri chloridi; but the bright-red blood continued to flow in a little steady stream, and it became necessary to sacrifice the perineum and apply a tampon.

When such an accident happens in a hospital it is a small matter to lay the patient in Sims' position, introduce his speculum, and unite the torn cervix with silver wire. It is easily done, it is safe, and is a sure cure. But in private practice it is not always feasible, and then tamponade may be of the greatest value; but to be effectual the vagina should literally be packed full with cotton wrung out of a one-per-cent solution of creolin. The tampon must extend through the whole vulva out to the lower edge of the labia majora, and then a piece of muslin should be pinned very tightly to the binder in front and behind, so as to combine pressure from without with that against the vaginal wall and the styptic effect of the creolin.

The immediate closure of the lacerated cervix with silver-wire sutures was practised and recommended by the late Dr. Pallen¹ in 1874.

There is no danger that the suture will cut through. On the contrary, the cervix becoming smaller every day after the birth of the child, the sutures will rather become loose, but before that happens union will have taken place.

In my opinion hemorrhage due to the laceration should be the only indication for the immediate closure. I am convinced from personal experience that many lacerations heal spontaneously, so that an operation would be superfluous.

Furthermore, the immediate closure of the lacerated cervix exposes the woman to infection. My rule is, if it can be avoided, never to introduce as much as a finger into the parturient canal after the birth of the child. The placenta is expressed by Credé's method. After the expulsion of the child the parturient canal is full of wounds and abrasions, and

¹ AMERICAN JOURNAL OF OBSTETRICS, 1879, vol. xii., page 322.

there is a strong current of blood and lymph toward the interior of the body. At no time is the susceptibility for infection greater.

In this respect there is a fundamental difference between the immediate perineorrhaphy and the immediate trachelorrhaphy. The former is an important prophylaxis against infection. By disinfecting the torn surface and uniting it we exclude a large area through which infection might take place, and the operation is performed in such a way that the deeper parts are not touched at all, and are even protected with a temporary antiseptic tampon above the torn part. In order to perform trachelorrhaphy we are, on the contrary, obliged to bring the cervix into view and to give the air—which, in my opinion, is often the carrier of the microbes that cause puerperal infection—access to the uterus.

But if there is hemorrhage that resists hot water and styptics, it must be checked, and, performed with proper antiseptic precautions, I hold the primary trachelorrhaphy to be preferable to the tamponade. If the necessary instruments were not at hand, I would even prefer the application of one or two of Koeberle's *serre-fines* to the tampon, since it would not interfere with the free flow of the lochial discharge.

ABORTION.

BY

E. S. McKEE,
Cincinnati, O.

It is not the object of this paper to cover the entire field included under the heading, but to merely touch upon some special points of the subject. The discussion is here limited, so far as possible, to the expulsion of the products of conception during the first trimestrium, omitting the consideration of miscarriage and premature labor.

The statistics of abortion, if reliable, give much information. The following figures probably come near the truth:

18.6 per cent of the whole number are habitual ; uterine diseases account for 50 per cent ; reflex causes, 21.528 per cent ; syphilis affecting the fetus, retroflexion, salpingitis, and rheumatism, each 7.143 per cent. Treatment is followed by cure in 78.477 per cent, the patients subsequently bearing healthy children ; while sterility results in 21.528 per cent, of which 14.286 per cent have incurable uterine affections or are past child-bearing, and 7.242 per cent remain healthy but sterile. Ninety per cent of child-bearing women abort once or oftener, and about one pregnancy in ten terminates abortively.

During the years from 1867 to 1875, inclusive, New York City reported one hundred and ninety-seven deaths resulting from abortion—a number probably far short of the truth. During seven years the Rotunda Hospital, Dublin, only had one death from abortion.

The causes producing abortions are extremely variable ; sometimes the least thing is operative, and again an injury of the greatest magnitude may be insufficient. The discordant professional opinions on the subject suggest the necessity of renewed researches. Conditions of maternal blood often play an important part in the causation of abortion. Powerful emotions, as loss of friends, fires, explosions, and accidents of various kinds, are thought to alter the blood and thus bring about this result. The condition of the blood which accompanies infectious disease is a frequent source. When quinine is given to pregnant women it should be combined with a small quantity of morphia, which will overcome the danger. It is doubtful if quinine will originate uterine contractions, but it will increase them if once created. The constant inhalation of the odor of the cottonseed and plant, especially after being nipped by the frost, has been thought by some writers to cause abortion in women who are picking cotton. Others think the stooping position and the friction of the apronful of cotton on the distended abdomen the real cause. Chronic lead poisoning and cardiac insufficiency have been recently described as resulting in abortion, and the latter is cited by Thomas as a sufficient reason for its artificial production. The treatment is to relieve the heart by the recumbent posture. Cigar making and occupations involving constant manipulation of tobacco apparently lead to abortion.

"Habitual" abortion is an unscientific term, only applied to cases of repeated abortion for which we have no better name; where, having excluded maternal, fetal, and uterine causes, we are at a loss for a befitting designation. We can sometimes only explain them on the theory of a hyperesthetic condition of the uterine system of nerves, though a careful study will usually reveal the predisposing factor.

Criminal abortion is termed by our European relatives *the American sin*, which they think so common among our people as to deserve this appellation. The Americans speak with horror of the European percentage of illegitimate births. They reply that in this country we hide our sins by the destruction of unborn babes. Physicians meet in practice women who would scorn to speak evil against a neighbor, who are tender and kind, leaders in social and even religious life, who are above suspicion as to chastity, yet who do not hesitate to murder their own children, provided only they be small enough. They do this not only once but repeatedly; and not only do they commit this crime, but talk about it very unconcernedly, or engage in disseminating a knowledge of the work among friends as earnestly as they would work for a supper for the benefit of a hospital, kindergarten, or the far-distant heathen. They would fear to reverse the hands of a watch, but would break the laws of Nature in their own human mechanism, a hundredfold more delicate, complicated, and precious. But criminal abortion is not all to be ascribed to sin alone, but partially to tender-heartedness. Many have been far more tempted by a woman's tears to lend her the knowledge which would save her from disgrace, than by the large fee she offered.

The indications for the induction of abortion are well presented by Parvin.¹ He finds it sometimes necessary in diseases of the kidneys, though prophylactic measures will generally suffice. The same is true of chronic heart disease and diseases of the respiratory organs. Chorea is an indication in cases where the life of the mother is jeopardized and other remedies fail. Eclampsia is infrequently an indication. Cancer of the rectum is occasionally so, as is also mammary cancer and severe cases of rheumatism.

¹ "Annual of the Universal Medical Sciences," i., 7, 1891.

When the true conjugate of the pelvis is not less than seven centimetres, Von Brehm, by dieting the mother so as to prevent the formation of adipose tissue in the child, has avoided the necessity of inducing premature labor.

The induction of abortion has changed somewhat in method during recent years. Among the instruments recommended are Hegar's dilator, followed by a tampon saturated with a four-per-cent solution of salicylic acid. An improvement on Tarnier's elastic balloon consists of a pear-shaped rubber ball, which when reduced to a small size is introduced into the uterine cavity and inflated. When pains commence it is slowly expelled in its distended state, and the fetus soon follows. Iodoform tampons are claimed to bring about the same result more safely and quickly than the sponge tent. Puncture of the membranes is sure but slow, inconvenient, and dangerous. The bougie is not entirely safe and not always sure. The average time of bringing on pains by the bougie is much greater than after puncture. Galvanism is recommended as sure and safe.

The diagnosis of inevitable abortion is ever desirable, but unfortunately the signs are not always sure indications. Hemorrhage may continue for a considerable time and return at frequent intervals, yet the pregnancy may go on to term. Marked softening and dilatation of the cervix are generally followed by expulsion of the ovum, but not always. Three authors report cases where portions of the uterine contents were expelled and abortion did not follow. Given ruptured membranes, a persistent hemorrhage, dilated os, ovum dead and presenting, portions expelled, abortion is inevitable.

No class of cases cause us more anxiety and doubt than do abortions. Our masters lead us different paths; and if we go to the learned societies and listen to their discussions, we are surprised at the diversity of opinion. As there is no fixed plan of treatment, the practitioner can follow almost any course which strikes his fancy, and find respectable authority to confirm him. The radical and the conservative methods in the treatment of the retention of the placenta and membranes have their advocates in every country. It is seriously considered by some that the safety of the patient and the comfort of the physician are best served by the immediate

removal of the secundines after the expulsion of the ovum, in every case where it can be done without force sufficient to injure the woman. The curette in skilful hands and with a proper patient is a means of good after abortion, yet under other circumstances it is an instrument of danger.

In the text books we find remarkable unanimity in recommendation of the expectant plan, while the recent contributions to medical literature favor immediate removal. Careful consideration of the facts and circumstances of each case will result in a more intelligent conduct than the observation of any dogmatic rule. All will accord that the early removal of the secundines is desirable, but the question arises, When is it best?

Abortion is not physiological, as delivery at term, but is a pathological process—a premature death, a breaking up and tearing away, an abnormal condition. The dangers from septicemia and hemorrhage, the local inflammations, the organic changes, the subinvolutions and septicemia arising from decidual retentions, render early, prompt, and thorough removal a matter of paramount importance. Safety, speed, and completeness are the principal questions for consideration. Are we doing the proper thing when we sit and wait for the onset of sepsis before removing the remains? Immediate action may avoid the danger of septicemia and save the life of the patient. The so-called *expectant plan* is an easy way, and, thanks to Nature, is successful in a great majority of cases; but why wait for dangerous symptoms before active interference, which may then be too late? After radical treatment the patient is less liable to be troubled with subinvolution, hypertrophy, and displacement of the womb. The method is generally easy, and, if carefully done, is safe. Intravaginal injections of hot bichloride solutions should precede, and intra-uterine follow, this treatment.

I have had some noteworthy results in repeated abortions from the use of chlorate of potash, recommended by Shoemaker in his new edition. In one case, where the patient had aborted ten times while married to two different husbands, fifteen grains of chlorate of potassium were given three times a day, also *tinctura ferri chloridi*, and two children were brought to term and born alive. No cause

could be found in this case, but from the history and the time of the occurrence fatty degeneration of the placenta was suspected. The use of this remedy was first suggested by Sir James Y. Simpson, who employed it on the theory that an abundance of oxygen was supplied to the fetus by this means through the placental tufts. He gave it because of disease of the placenta, but also believed that it was a means of arterializing the blood. He was led to the use of this remedy by the experiments of Davy and Stephens, who found that an alkaline salt, when brought into contact with the blood, gave it an arterial appearance. From the large amount of oxygen contained in each atom of the chlorate of potash, Simpson argued that the maternal blood would be better oxygenated, and the child's respiration be thereby improved, by its administration. Anemic patients improve in color under this drug. Alkalies are promoters of waste and assist the removal of inflammatory products. Patients who had not gained under tonics and nutrients will improve in weight and strength upon the withdrawal of these remedies, waste producers, provided their use has not been too long continued. It is a well-recognized fact that there is an excessive accumulation of carbonic acid in the presence of inflammatory changes of tissue. In the presence of carbonic acid nascent oxygen is formed from chlorate of potash, which may show how the inflammation is relieved and oxygen furnished the fetus. It is claimed on good authority that the chlorate of potash does not part with any great amount of oxygen at the body temperature, yet there remains the fact that, by increasing the alkalinity of the blood, its oxidizing function is augmented. Whatever its *modus operandi*, whether as a tonic or by its decomposition in the blood, thus directly furnishing an increased quantity of oxygen to the fetus through the placental tufts, or whether it puts the blood in such a state that it is able to carry an increased supply of oxygen, the clinical fact stands that it has a direct beneficial effect in properly selected cases, *i.e.*, where there is fatty degeneration of the placenta.

A very necessary method of treatment is absolute rest at the time for the recurrence of menstruation. This rest should continue as long or longer than the menses were wont to

last; and complete rest in bed is sometimes necessary during the second, third, and fourth months. The local treatment and cure of chronic uterine disease is very essential, as this and its consequences are a very frequent cause of abortion. In these cases mercury seems to have a beneficial effect, even in non-specific cases. The *viburnum prunifolium*, here as elsewhere, proves a very efficient uterine sedative. The unfortunate physician who is called to attend these doubtful, confusing, and tormenting cases should derive a large amount of comfort from the fact that gentlemen who have had quite an extensive practice in this line state that they have never lost a case from hemorrhage. Great care should be exercised to avoid rupture of the membranes, as the expulsion of the ovum *en bloc* is particularly desirable. Early aseptic precautions are advisable, preferably the intra-uterine injections of hot solutions of bichloride of mercury. The folly of deferring these precautions until the substance in utero begins to putrefy is attested by numerous deaths. Iodoform in suppositories doubtless has the effect of preventing further decomposition. The faradic current is of considerable value in cases of uterine inertia. It produces and intensifies contractions, checks hemorrhage, lessens suffering, and hastens delivery. A mild current is all that is necessary, the main thing being its intermittency. In fact, a strong current is rather to be avoided, as it is prone to produce a spasm of the muscular tissue.

To prevent abortion use opium hypodermically by mouth or rectum to quiet nerves, muscles, and mind. Preparations containing *viburnum prunifolium* have done good work in allaying uterine contractions. Tampons will often dilate the cervix and hasten delivery, but are in many ways unsatisfactory and unsafe. They should consist of iodoform gauze, or absorbent cotton balls soaked in an antiseptic solution, renewed about every six or twelve hours, and the patient carefully watched. I do not use ergot until the uterus is empty. I prefer to dilate the cervix with Palmer's steel dilators, and for removing the contents use my finger. Where this, Nature's excellent instrument, fails, Reamy's placental forceps will be found to act very nicely, having as recommendations simplicity, safety, and efficiency.

TRANSACTIONS OF THE FOURTH ANNUAL
MEETING OF THE AMERICAN ASSO-
CIATION OF OBSTETRICIANS
AND GYNECOLOGISTS.

HELD IN NEW YORK CITY, SEPTEMBER 17TH, 18TH, AND
19TH, 1891, AT THE ACADEMY OF MEDICINE.

(*Abstract.*)

(Concluded from page 1256.)

SECOND DAY—MORNING SESSION.

The President, DR. A. H. WRIGHT, of Toronto, *in the Chair*.

DR. M. B. WARD, of Topeka, Kan., spoke on

REMOVAL OF THE UTERINE APPENDAGES, WITH RESULTS.

He prefaced the report of his cases by saying that operation for removal of uterine appendages is truly missionary work in Kansas. He performed the second operation of this character done in the State, February, 1890.

He then made a brief report of fifteen cases, in which he gave a history of the patient before the operation, the character of the operation, and the results at the time of writing the paper.

Three deaths were recorded, his first, third, and eleventh cases terminating fatally. Only one of the three was caused by the operation, and in that case the previous condition was deplorable. The reports of the cases were interesting and the results gratifying. Some of the conditions were extremely grave before the operation, and yet recovery in most of the cases was satisfactory.

DR. JOSEPH PRICE, of Philadelphia.—We all know how satisfactory the results have been of late with this class of cases in dispensary and in public practice. We also know how distressing the results have been among the more wealthy, where harm follows from the delay due to treatment by rest and every other known method before resorting to radical measures.

Our mortality among the rich varies between six and ten

per cent higher than among the poor, and there is no excuse for such a difference. A pus tube, an abscess in the pelvis, a pus accumulation in the axilla, under the deep tissue anywhere, should be removed. The treatment is precisely the same. Good surgeons throughout the world will trephine for an accumulation of pus not larger than a hazelnut. Surely, if it holds good in brain surgery, it should hold good in pelvic accumulations. Again, just this state of affairs is common in all branches of abdominal surgery. It is so with gall stones, hepatic accumulations. It is so notwithstanding we have had many years of special pleading, many voices crying in the wilderness—such men as Bantock, Keith, Tait, Thornton, and others pleading specially for early ovariectomy. We find large numbers of neglected cystomata, and the mortality remains higher than it should in that class of cases.

DR. E. W. CUSHING, of Boston, said he appreciated and believed every word that Dr. Price had uttered. The bad cases that he had seen were the ones that had been neglected; early operations had done well. Allowance must be made for the position of a man with his elders against him. It is dangerous for one to get too far ahead of the sentiment of the community. The weight of the teaching and the intent of every operator, as far as he can carry his people along with him, should be to operate early.

DR. MORDECAI PRICE, of Philadelphia, thought many of the delays were attributable to the cowardice of the surgeon. We all should know that when we approach a question where a life is involved we should boldly consider every side, even though, if we operate and the life is lost, the community say that it was the operation. If we refuse to operate and death comes, we feel and know that it was but a consequence of our own cowardice. It is our business to go to these cases, and when we discover that pus exists, to remove it, and the sooner the better.

DR. JOSEPH PRICE, of Philadelphia, said that gonorrhea is unquestionably responsible for a majority of these cases. Gonorrhea is no longer treated by intelligent physicians. Every drug store in the land is a clap shop, probably as well in Boston as Philadelphia. It is a neglected disease. The sequelæ, in the male as well as in the female, are very much more marked than they were several years ago when the disease was treated by the educated physician.

DR. C. A. L. REED, of Cincinnati, extended his congratulations to Dr. Ward for his good paper, which is certainly to be recognized as pioneer work in the great State of which he is a citizen. He was impressed with the idea that gonorrhea in woman is a very serious affair. It progressively invades the mucous tract, climbing the vaginal wall, climbing the endo-

metrium, invading the sanctum sanctorum of the female anatomy, and producing its most serious ravages upon the uterine appendages.

DR. WARD, closing the discussion, thanked the Fellows for their kind compliments. In the West it is extremely difficult to get consent to perform these operations except as a last resort.

DR. JOSEPH PRICE, of Philadelphia, read a paper upon

A CONSIDERATION OF EMMET'S LAST OPERATION FOR SO-CALLED LACERATION OF THE PERINEUM, OR PROLAPSE OF THE POSTERIOR WALL OF THE VAGINA FROM LOSS OF FASCIAL SUPPORT, OR MUSCULAR RELAXATION, OR TEAR.

At the meeting of the American Gynecological Society in 1883, when Dr. T. A. Emmet presented his paper on the "Etiology of Perineal Laceration, with a New Method of Operation for its Repair," it was evident, in the words of an eminent gynecologist, that the members of the Society were very much at a loss to comprehend the steps of the operation as described by its illustrious originator. It is still not understood generally in Philadelphia, while at the present time we rarely hear of any one's performing the true Emmet operation unless it has been improved by some supposed modification. These modifications are for the most part meretricious. The Emmet operation seems to fulfil every indication for the restoration of the damaged perineum, far better than any other operation before or since devised, not excepting the so-called flap-splitting or Tait's operation, over which so much furor has lately been raised. The value of the operation has not been recognized because the published reports of it have been so meagre and so little descriptive, excepting some explanations of modifications, that the very idea of the operation has not been grasped, except by those who, like the writer, have been fortunate enough to have Emmet personally demonstrate the operation and its advantages. Unfortunately, his original pamphlet was rather confusing than instructive and explanatory to those not already comprehending the operation. A drawing was necessary for the exact understanding of the successive steps of the operation. In several cases in which Emmet's operation was performed the writer had the assistance of Dr. J. Madison Taylor, who has sketched the appearance of the various stages. The theory of the mechanism of laceration is original with Emmet. He believes that the damage that leads to the severe consequences of loss of support to the pelvic diaphragm is principally in the deep layers of the pelvic fasciæ, a separation of the fibres of those fasciæ from the outlet of the vagina. The

soft parts of the vagina are crowded up in advance as the fetal head passes. When the head of the child is forced down upon the so-called perineal body, the perineal tissues are stretched transversely before the head appears at all at the vaginal outlet. The so-called perineal body is attached principally at the two rami of the ischia through the strong and almost inelastic ischio-perineal fascia. When the head, following the sacral curves, crowds down the vaginal tissues before it, it meets its almost entire resistance from a lack of extensibility in these ligaments. If the force is severe enough they will separate, not by a tear from the fourchette downward, but by a separation of those fibres within the mucous membrane from their insertion without and below the vaginal orifice. It is the pelvic fascia that supports the vagina, and this fascia is often separated from its attachment to the vagina, or laterally from one or both rami at the passage of the head during parturition. The tear at the orifice of the vagina is of infinitely less importance than is the rupture of the ischio-perineal fascia. These fasciæ preserve the proper resilience of the floor of the pelvis. This removed, the anterior and posterior walls of the vagina have lost their support, and they must prolapse through the now weakened vaginal ring. It is well known that rectocele occurs constantly in patients in whom the fourchette has not been torn. A vaginal perineal laceration may pass around the sphincter ani. It is easily shown that the perineum is a thin diaphragm, not a body of firm fascia, muscle, or connective tissue. The rupture, which may or may not have been submucous, is not in the median line, but has been more severe on one side than on the other. In Emmet's expressive illustration, the bag has lost its puckering-string. The prolapse is evidently due to a want of resisting power of the pelvic floor. Other operations have been previously devised to meet the same indications, such as those of Simon, Hegar, Hildebrandt, Freund, Bantock, Baker Brown, and Emmet's trefoil operation. Some of these restored the perineum so that it was even longer than before, but failed in its real intention, since little by little the rectocele again prolapsed through the narrowed outlet to its original condition. A great advance was made when the denudation was extended so as to include a portion of the rectocele and so restore by cicatricial healing the perineal body. The results were frequently anything but happy. The old operations aimed to replace the perineal body by a new structure built from the adjacent parts; but when a perineum is lacerated it is not destroyed. If we can bring together the ends of the ruptured ischio-perineal ligaments, we will absolutely restore the supporting power of the perineum. Emmet's last operation aims at removing the

superfluous vaginal mucous membrane at the vulvo-vaginal orifice, continuing at the same time the denudation along the line of the original rupture. As this line extends usually along the two sulci, the denudation assumes rudely the form of a crescent, whose convexity is the boundary of skin and mucous membrane of the vulva, while the concavity is marked by the summit of the projecting rectocele, and the cusps extend up the lateral deep sulci and posterior wall of the vagina. Finally he introduces sutures entirely within the vagina, beginning at the apex of a cusp, and closing by bringing the two denuded edges of the cusp or sulcus together. After the insertion of the crown stitch, one or more superficial stitches are sometimes necessary, according as there has been greater or less laceration. The essential landmarks of the operation—to wit, the crest of the rectocele or its most projecting part, and the lateral mucous membrane at the highest point to which it is intended to carry the denudation—are not to be lost sight of or changed as the operation proceeds. After the sulci have been closed, when the crown stitch is introduced, the inside stitches entirely disappear. The after-treatment is simple—rest, catheterization if necessary. The bowels are to be kept easily open. The writer has yet to see the slightest inflammation—cellulitis or phlebitis—from the operation. The stitches are removed at the end of six or ten days, except those in the sulci. These latter are removed in the second week. This is best done by partially everting the vagina by a finger introduced into the rectum.

This operation most nearly approximates the natural perineum. The great degree of success attending the operation is alone sufficient to recommend it primarily in all lesions of the perineum.

DR. L. S. McMURTRY, of Louisville, thought the importance of the subject increased by the great number of cases there are of perineal rupture coming up daily in the practice of gynecologists, and the large amount of imperfect work that is done in this branch of surgery, and the incongruous advice that is given to patients upon this subject. The general surgeon does a good deal of this work, and it is very often the case that the skin only is united, and in all probability the skin is attached away up the vulvo-vaginal fissure, higher than it was in the natural condition; and in many instances the physician, finding that the fourchette is not torn, assures the woman that her symptoms are due to nervous exhaustion and that there is no laceration of the perineum. It has been demonstrated this morning that you may sew together the skin without restoring the pelvic floor, and you may have the pelvic floor entirely destroyed without any rupture of the skin externally. Those are points, which have

been emphasized in the paper, which are not appreciated generally by the profession in regard to these injuries. The great difficulty in regard to the popularity of Emmet's improved operation for restoring the pelvic diaphragm is that it is difficult to clearly appreciate the operation without seeing it executed, and that it is very difficult to do the operation without giving it thorough consideration.

DR. W. H. WATHEN, of Louisville, thought Dr. Price had made an important subject unusually interesting, because of the practical manner in which he had presented it, and because of the vast experience he had had in doing successful work in this department of surgery, which makes all he says practical. In the main he fully agreed with him in his ideas and in his suggestions as to the proper means of operating. In operations where the tissues are torn down near the sphincter, with the anterior rectal wall presenting down in the vagina, he was practically in accord with the suggestions of Dr. Price, excepting that the procedure might be simplified by splitting the tissues between the rectum and the vagina laterally instead of denuding the mucous membrane. The splitting process can be accomplished by an experienced operator in less than half the time of the denuding process, and with not less than half the inconvenience from hemorrhage. The cardinal principle which should control us in this operation is to expose the ends of the torn muscles and the ends of the torn fascia, superficial, middle, and deep, and a failure to expose all these so that they may be brought together and held in position necessarily results in a corresponding failure in the result of the operation.

We ought to impress upon the general practitioner and the general surgeon, as well as the specialist, the importance of attending to these cases wherever they are met, but above all we ought to impress upon the profession the necessity of attending to these cases when they occur. There is no operation of any magnitude in the whole range of gynecic surgery that has the element of simplicity so perfect and the universal results so attractive as in the operation for complete or incomplete laceration of the perineum, if done immediately after the accident has occurred.

DR. J. F. W. ROSS, of Toronto, believed that the denudation of the tissues outside is superfluous, but is necessary in the vagina, and that we can combine the operation of denuding in the vagina with flap-splitting in the perineum, exactly as Dr. Wathen had said.

DR. MORDECAI PRICE, of Philadelphia, spoke strongly in favor of the Emmet operation. He believed with Dr. Wathen that we have no business to know anything about secondary perineal work. It ought to be the business of the

physician to have his materials with him, even if the case is a simple one, because accidents will occur in the best-regulated households in that particular; and it ought to be his business to at once apply his sutures, because union is almost invariably by first intention in these primary operations, and there is no better way than to use the silkworm-gut sutures, passing them as Dr. Emmet recommends. The tear in nine cases out of ten is in the right or left sulcus.

DR. H. T. HANKS, of New York, said he had been associated more or less intimately with Dr. Emmet in the Woman's Hospital for the last thirteen years, and had watched the development of the operation. He had been pleased to have the subject brought up for that very reason, because he has not only done good work in teaching us how to operate on a lacerated cervix, but has also given us some points on the operation on the perineum that we had not considered before, and which, when carried out to the letter as he has taught us, and as those of you who have seen him operate have been taught, give entirely satisfactory results. He believed the operation to be a successful one when well done and done as Dr. Emmet had taught.

DR. JOSEPH PRICE, of Philadelphia, closing the discussion, said: Some of us do the operation perhaps a little more than Dr. Emmet does—just a little more—but it all belongs to him. He taught us how to denude and everything that is good in plastic surgery. Some of us go a little further than Dr. Emmet. Dr. Hanks has made a perfect illustration of Dr. Emmet's operation. Many of us differ in this particular. Dr. Emmet does not go as high in the sulci as some of his pupils with the denuding. Dr. Emmet makes a triangle with a tenaculum; we make it with a denudation, and go into the apex of that sulcus. We give the woman as much pelvic floor as possible. There are very serious doubts as to whether a flap-splitting operation ever restores a sphincter. I have yet to see the first one, and know at least half a dozen women in Philadelphia who have had the flap-splitting operation. They have incontinence of gas and feces when they have a diarrhea. I have seen men do it and absolutely miss, in their denudation and everything else, the dimples of the retracted sphincter, or half-moon. There are very few men in this country that can map out the sphincter in a perineal tear through the sphincter. Dr. Emmet, if you will follow him, will place his fingers on the sphincter and make you trace a hard, iron-like sphincter all the way round. He again has taught us all we know about sphincter tears that is worth knowing. Emmet's inside perineal operation with the sulci sutures closed is an operation which completes the woman's comfort. He need not put in those inside sutures, as far as

the perfection of the operation and the comfort of the patient are concerned. The operation is complete when he completes his sulci work.

THE PRESIDENT then delivered his annual address,

THE GENERAL AND SPECIAL MEDICAL SOCIETIES OF AMERICA.

When we separated in Philadelphia last September we expected to meet this year in Washington as members of the Congress of American Physicians and Surgeons. The Congress, however, has refused to admit us, and I desire to give a plain statement of facts respecting the negotiations which have been carried on between that body and our Association.

The decision to form an American Congress was reached in the year 1886, and preliminary invitations were sent to the special societies, asking for their co-operation. All returned favorable replies excepting the American Gynecological Society, which refused to co-operate. The promoters were disappointed, as they desired a representation of obstetrics and gynecology. Some strong friends of the Congress decided to organize a Society of Obstetricians and Gynecologists, and, as a result, this Association was organized, not in opposition to another society, but largely in the interests of the new Congress.

In due time our organization was fairly completed, and a formal application for admission was sent to the Congress. In the meantime, however, a change had come over the old Society, and the applications from both societies for admission were made at practically the same time.

It was decided that the Society, which had shown pronounced hostility to the Congress up to the date of its sudden conversion and application for admission, should be received, and that the new organization, which had been formed to assist the confederation in a serious emergency, should be put on trial for a couple of years, and in accordance therewith the following resolution was passed:

“Resolved, That all new applicants must have held two annual sessions, and accompany their application with two volumes of transactions.”

We entered upon our period of probation with some surprise, but decided to comply with the prescribed rules. In due time we forwarded the two volumes of transactions. After a delay of many months we were asked for twelve copies of all our volumes. The thirty-six books were forwarded as soon as possible, and when all the evidence was received the Committee, after taking ample time for de-

liberation, met April 26th, 1891, and decided against our admission.

The question naturally arises, Why were we accorded such treatment? A rumor has reached me to the effect that the chief argument used against us was that our Association represented nothing more than duplicating the work of other sections, and for that reason should not be admitted. I have nothing to do with any such argument, and will remove the necessity of using it by conceding that the Congress had a perfect right to refuse to admit us. I insist, however, that it had no right to place us on probation for an extended period, and then absolutely ignore the essence of the implied contract.

The speaker then went on to give his views on the subject of general and special medical societies. He deprecated the idea of showing a too well marked line of demarcation between the specialists and the great mass of general practitioners.

He considered that the British Medical Association is the greatest medical organization that has ever existed. It contains 13,800 members, including a large portion of the brightest lights of the British Empire, who ever devoted their best energies towards the success of the society. In this country it seemed as if many of the leaders of the profession ignored the American Medical Association, the strictly national society. It was unfortunate that so many of these should miss the best opportunity of meeting the rank and file of the profession in their own country.

After referring to the present status of the important subjects of obstetrics and gynecology, he referred to the recent sad bereavement of the secretary, and, at the same time, spoke of the indefatigable efforts of Dr. Potter in the interests of the Association. He then paid a fitting tribute to the memory of that great obstetrician, Dr. Fordyce Barker, whom he described as one of the grandest and noblest physicians the world has ever seen.

After alluding to the bright prospects for the present meeting, he closed as follows: "I have been bitterly disappointed at the actions and methods of some whom I respected very highly; but I wish to forget all that, and remember only what I have found good and noble in the profession of this great republic. I trust that the troubles that have beset us will be the means of forming the strongest link in the firm chain that binds us together as brothers and co-workers in a good and great cause."

Dr. W. W. SEYMOUR, of Troy, read a paper on

A CASE OF CHOLECYSTOTOMY AND CHOLELITHOTRITY; DEATH FROM "LA GRIPPE" THE TWENTY-FIRST DAY.

The gall bladder was incised and fine stones removed from it, and one stone in the common duct crushed by forceps applied to the duct. The crushing was done because the wound was so deep that the difficulties in the way of an exact suture of the duct in case of excision of the stone were enormous. At the autopsy, when death resulted from an intercurrent attack of grippe, the abdominal wound, save at the drainage opening, was firmly united, the adhesion of the gall bladder perfect, and there was not the slightest evidence of suppuration, inflammation, or ecchymoses in or about any abdominal organ. The inferences drawn were: 1. That in large, fat, and flabby bellies crushing is safer than excision with its risk of imperfect suture. 2. That excision should only be a method of election where an exact suture is beyond question. 3. That if there is any suspicion of injury to the duct, drainage should be inserted to the suspected point, and, if needed, the abdominal cavity protected by gauze tampons. 4. That in case of stones projecting into or overlying the duodenum, the duodenum may be incised and the stone, if projecting, broken up, or the duodenal portion incised and the stone crushed or delivered intact, as Dr. Charles McBurney has recently successfully done with a stone as large as a pigeon's egg.

Dr. A. VANDER VEER, of Albany, read a paper entitled

REPORT OF CASES OF CHOLECYSTOTOMY, WITH SPECIAL REFERENCE TO THE TREATMENT OF CALCULUS LODGING IN THE COMMON DUCT.

He said: In presenting this paper as a contribution to the surgery of the gall ducts, I shall refer somewhat to the surgery of the gall bladder. Yet my chief desire is to get from you a discussion and your views regarding a line of treatment in cases where we find a contracted and perhaps almost obliterated gall bladder, or where the common, cystic, or hepatic ducts are entirely closed by lodgment of a calculus, or stenosis from other causes. He then presented a group of three cases illustrating these points, in which he had operated twice successfully, and exhibited specimens removed in each. From his experience in these and other cases he offered the following:

This operation is not very difficult, and the results favorable beyond a doubt; but does not this method deter us in some cases from pushing ahead and relieving cases where

practically no gall bladder is to be found? Are we not too conservative at times where we have stenosis, severe adhesions, and apparently no gall bladder present?

The intent of this paper is to deal only with those cases where there is an obstruction of the ductus communis choledochus, the cystic or hepatic ducts, from any cause whatever. Cholecystotomy, with suture of bladder walls to parietal wound, when the viscus is fairly well developed, is not a serious operation. Primary and secondary opening of the gall bladder I mention here to emphasize the fact that I believe the latter is always to be condemned, for the following reasons:

1. It is always necessary, before the closure of the abdominal wound, that the gall bladder be opened and emptied, as it is often impossible to recognize conditions until then which will require manipulations not only within the gall bladder but also within the abdomen.

2. Prolonged obstruction in the intestinal portion of the common duct may lead to its dilatation, together with that of the gall bladder, and the destruction of anatomical outlines. Biliary calculi lying in the common duct, in the hepatic or at the mouth of the cystic duct; stricture of the ducts from local ulceration (exceedingly rare), or occlusion of them from external causes, as cancer of the pylorus or the last portion of the pancreatic duct, all require treatment for relief beyond either cholecystotomy or cholecystectomy.

I believe it is possible to freely loosen adhesions that have formed in the region of the gall bladder, and in all cases of severe traumatism we should not hesitate to make use of the tamponade of iodoform gauze and drainage, or employ the method so clearly recommended by one of our Fellows, Dr. Morris.

Dr. H. O. Marcy's paper on "Relief for Biliary Obstruction" defines the steps of the operation very closely, particularly in relation to suturing of the incision made in the gall duct.

The operative technique may be varied as follows, by:

1. Dislocation of the calculus *en masse*, either into the duodenum or into the gall bladder.

2. Cholelithotrixy, either by crushing through the walls of the duct with padded forceps or fingers, or from within the gall bladder by means of the needle or fine probe, followed by removal by the way of the gall bladder or intestinal canal.

3. Breaking of the calculus by the introduction of strong needles through the walls of the duct, and subsequent dislodgment of the fragments.

4. Cholecystenterostomy according to Von Winiwarter, or

modifications of it as have been suggested by Gaston in his elaborate experiments upon dogs.

5. Incision of the gall duct and removal of the calculus, with subsequent suturing of the incision in the duct.

The application of these methods conflicts with some notions in surgery which to my mind are altogether fallacious. The first is, that sutures can never be applied to the gall bladder and ducts with safety. The first cholecystotomy was followed by suture and recovery.

The second notion is that the healthy biliary secretion always causes peritonitis when free in the abdominal cavity. The experience of Schuppel, Bostroun, the cases of Paraisse, Sabatier, Thiersch, etc., demonstrate the falsity of this dogma.

We must put these fallacious ideas behind us, as we have many concerning the technique and management of abdominal section. I believe in a wholesome fear of the peritoneum and of throwing around our patients every possible safeguard. I should not like to complete an operation knowing that bile might flow over the intestines, but I believe that such wounds, by proper drainage and iodoform-gauze tamponade, can be made comparatively safe for the patient, much safer than the condition for which the operation was done.

Those cases which present the least difficulties are where the calculus can be removed *en masse* by pushing either into the gall bladder after cholecystotomy (preferable) or into the duodenum. The danger of tearing the duct across its diameter, as has already occurred, must be kept in mind, and will somewhat circumscribe the operation of fracture or incision and removal from the intestine.

The second procedure, together with the third, may be employed in suitable cases, but the choice will lie between them and the fifth procedure, that is, incision and removal.

The fourth method of treatment, by establishing a new communication between the biliary ducts and the intestine, must always have a certain utility, especially where it is found that the seat of obstruction (the common duct) is bound down by adhesions and cannot be made accessible.

To one doing abdominal work I would advise a careful perusal of Dr. Gaston's paper in *The Atlanta Medical and Surgical Journal* in 1884, entitled "Experimental Cholecystotomy."

In France the operation bearing the name of Von Winiwarter has recently received much attention, and flattering results are reported.

Under the fifth division—that is, incision and suture of the gall ducts—we have, I believe, in many cases a method which promises great success, where heretofore cases have been treated by establishment of biliary fistula, which only relieved

for a short time. . So far as I have been able to learn, incision of the common duct has been seldom performed in this country. The technique of the operation is as follows: Usual vertical incision, from tip of cartilage of tenth rib, made of sufficient length to permit free examination. It may be necessary to complete the operation by making a transverse incision through the right rectus abdominalis. Incision over stone, in line of duct, is made. Fluid behind duct should be withdrawn by aspirator, or sponges placed to protect surrounding parts. First row of sutures continuous, introduced just within serous coat of duct, brought just within the mucous coat, but not involving it; second series Lembert, bringing the serous coat into accurate apposition. Surround drainage tube on all sides with iodoform gauze tamponade, the ends being left in abdominal wound, closing latter with silkworm gut. One or two silkworm-gut sutures may be introduced and tied in loop, so that after removal of tamponade they may be tied and abdominal wound more completely closed.

DR. R. T. MORRIS, of New York.—There is one method of procedure, in cases of gall stones, so simple that I wonder that anybody has failed to think of it. Gall stones can be dissolved very easily by chloroform, ether, and some of the marsh-gas series. We do not need any forceps. We can remove the greatest element of danger by dissolving them right in place. The operation consists in suturing the gall bladder to the abdominal wall, then waiting for forty-eight hours until adhesion has taken place. The cases of greatest danger after operation are those followed by leakage of bile or mucus or the fermenting contents from the gall bladder into the abdominal cavity. Therefore the ideal procedure consists in first suturing the gall bladder to the abdominal wall, waiting until adhesion takes place, opening the gall bladder, and with a syringe injecting down upon the gall stones, at any time you please, a week or a day or a month after, a chemical that will make a solution of the cholesterin quickly and safely without imposing the grave danger upon the patient of crushing, bruising, or injuring the common duct. I am making experiments in this line to find some non-irritating solution which will dissolve the gall stones easily.

DR. L. S. PILCHER, of Brooklyn, recognized the fact, as all surgeons do, that the gall bladder has become a fit subject for surgical interference, and that, with the rapidly increasing experience which is being gained in work upon that organ, we shall soon have well-established indications for not only examining the organ, but also for the different classes of operations which we shall be called upon to do for the relief of the conditions which we find present in it. The ideal

cholecystotomy, in which the organ is exposed, is opened, is evacuated, is closed and dropped back into the abdominal cavity, suggests itself as an operation extremely desirable to be done, if the conditions are such as to make it feasible to do it. The extirpation of the gall bladder has been done, and will at times be found necessary if we are to relieve the conditions which have made operation of any kind necessary. The difficulties which attend the operation are great, and it can only be rarely that a surgeon will feel justified in undertaking its accomplishment. The opening of the common duct and the removal therefrom of a gall stone have been described to us this afternoon. The successful performance of the operation has again and again been demonstrated to us. The possibilities of relief which are open by means of that should always be present in the mind of the surgeon. He then presented and discussed some specimens of gall stones.

DR. KELLOGG, of Battle Creek, reported a number of interesting cases of operation upon the gall bladder.

DR. M. B. WARD, of Topeka, stated that he had done the operation twice on a dog, removing the gall bladder entirely. His first operation was a failure, death occurring from general peritonitis on account of some defect in the operation. The next dog got well and very fat, and was subjected to three other operations on the intestines. He inquired whether the gentlemen found it easy to bring the gall bladder up and attach it to the parietes. He found it difficult unless the gall bladder was enlarged.

DR. SEYMOUR, closing the discussion on his part, said, with regard to the attachment of the gall bladder to the abdominal wound, the method pursued by Mr. Tait is very satisfactory, particularly in cases of contracted gall bladder. That is, not to attempt to bring the gall bladder up to the level of the skin, but to suture the gall bladder with an interrupted buried silk suture at an intervening height in those tissues, taking a sufficient number of interrupted sutures to give strong and firm coaptation of the structures. He considered the matter of dissolving gall stones within the gall bladder as still *sub judice*. In view of that the operation of Tait—opening the gall bladder with establishment of a fistula—is the most rational operation. He considered it very possible that there would be a recurrence of the disease with the persistence of the constitutional condition. He considered the silk suture preferable in this operation to any of the animal sutures.

DR. VANDER VEER, closing the discussion on his part, said that, in reference to attaching the gall bladder to the parietes, he would only add this, that before the gall bladder is attached to the incision, and before it is opened, we should make a very

careful examination of the common duct and be very certain as to the condition of the pancreas.

DR. W. H. WATHEN, of Louisville, read a paper on

ASEPSIS IN INTRAPERITONEAL SURGERY.

If the proper precautions as regards cleanliness in every detail before and during an operation are observed, we need no antiseptic germicides in intraperitoneal surgery. If solutions of sublimate, carbolic acid, etc., are brought in contact with healthy peritoneum, their action is harmful. I will not condemn the use of chemical solutions for the purpose of sterilizing the operator, assistants, nurses, or patient, or the room, instruments, sutures, dressings, sponges, etc., if used before the operation is begun; but the chemical germicide should be removed from everything that is brought in contact with the peritoneum. Unless everything is made practically clean independent of the germicide, that will not make it aseptic. It is too often true that operators who are loudest in advocacy of germicide solutions are the least cleanly, and I have known a few of them to forget to wash their hands before beginning an operation or before examining a woman in labor.

There are relatively few men who know how to be surgically clean in every detail connected with intraperitoneal surgery, and if the time and labor that have been devoted to teaching the medical profession how to use antiseptic germicides had been directed to teaching the value of, and means of accomplishing, surgical cleanliness, septic peritonitis following laparotomy would be comparatively infrequent. Of course the above does not apply to all men who use chemical antiseptics, for some of them are the most cleanly men I have seen operate, but I believe they would get as good or better results if they omitted the antiseptics. The peritoneum is usually infected by contact, and the danger of atmospheric infection is practically *nil*, as has been shown by the excellent results in laparatomies done in large and crowded amphitheatres.

He explained in detail the latest and most improved methods of asepsis. He advocated drainage with a small glass tube open at both ends, with fine holes on sides extending within two inches of the mouth. He opposed the practice of introducing the wick or gauze in the tube, and preferred to remove the blood and secretions by suction with a long nozzle syringe or a syringe with a gum tube attached.

DR. HENRY O. MARCY, of Boston, read an essay entitled

FEMORAL AND VENTRAL HERNIA IN WOMAN.

The methods by which the author obtains a radical cure are original, and are followed by most exceptional results. He

advocates the dissection of the sac to its very base, which is sutured across and removed. The internal ring is carefully closed by a line of deep, double, continuous tendon sutures. The canal is narrowed and closed in a similar manner, and the wound is sealed with iodoform-collodion, without drainage. The operation is conducted with the strictest antiseptic care; and since Dr. Marcy was the first to use and publish the advantages to be derived from buried animal sutures, and systematically to extend their applicability in the general field of surgery, we quote his emphatic directions: "There is but one rule, and it cannot be too rigidly enforced—the *aseptic* suture must be *aseptically* applied in *aseptic* structures, and the wound must be maintained *aseptic*. The failure of either of the above-mentioned factors not alone endangers the result, but may be followed by the most serious consequences. Modern surgery demands of the operator every safeguard to insure an aseptic wound, but he who uses buried animal sutures must take, if possible, even greater precautions, since infection carried into a wound thus firmly closed is, for obvious reasons, attended with much greater danger than in a wound united by interrupted sutures which, at the end of a few days, are to be removed, and where drainage is relied upon to permit the escape of infective or foreign material. It is in part on account of defective technique, the use of drainage, and the too often septic wound that failure to effect a cure after hernial operations so generally occurs. . . .

"I began to use the buried animal suture in operating for the cure of hernia in 1871, and since that time have for the most part used it in the closure of all operative wounds; and in all my operations for the cure of femoral hernia, where the integrity of the intestine has not been involved, I have never observed a subsequent symptom indicating danger, and, so far as I have been able to learn, there has not been a single recurrence. There is little pain, and even edema of the tissues does not ensue. After a few days in bed the patient is allowed to sit up. In some instances I have permitted the use of the chair the second day, without any apparent harm. I never advise the subsequent application of a truss. . . .

"If it can be demonstrated that femoral hernia is curable, then the advisability of the operation should be taken into consideration; and if it can be proved that the cure remains permanent, it adds much to the argument in favor of operative measures; but where it is demonstrated that, under proper precautions, based upon an accurate anatomical knowledge of the structures involved, the operation is not severe, does not cause long detention from active duties, does away with the punishment inflicted by the life-long wearing of a truss, and is almost without danger, there remains no reason why

all the sufferers from femoral hernia should not profit by surgical measures and demand to be restored to the ranks of active service."

Dr. Marcy makes an equally strong plea in behalf of surgical intervention for the cure of sufferers from umbilical and ventral hernia. In umbilical hernia he dissects the peritoneal sac quite within the margin of the ring, sutures it across at its base, and resects it. The subsequent steps of the operation are conducted under irrigation. There are conditions when it is wise to resect the ring and close as in an ordinary laparotomy; but the method which Dr. Marcy more generally recommends is one quite peculiar to himself. The structures composing the ring are divided laterally upon the plane of the abdominal wall, about one-half of an inch in all directions. This admits the coaptation of the sundered parts, and, by lines of strong, continuous tendon sutures, the separated edges are coaptated in a way greatly to broaden the united parts. This widens the line of union to an inch or more, instead of bringing together the narrow edges of the tendinous ring; and, besides affording this great depth to the united portions, it brings together refreshed surfaces in a high state of vitalization, likely to be followed by firm union. It also admits the joining of the tissues in three distinct layers of strong sutures. As in the other forms of hernia, the skin itself is closed by a line of running or lacing sutures, taken from side to side through the deeper portions of the skin only, which admits of its coaptation by sutures entirely hidden from view. Such a wound requires no drainage and it is permanently sealed with collodion. The weight of years of experience in active surgical practice enforces the value of Dr. Marcy's contributions upon a subject of the highest surgical importance, since the radical cure of hernia is considered by many as yet *sub judice*.

DR. J. H. CARSTENS, of Detroit, said everything stated in the paper gave him pleasure except the employment of ether. He hoped some time the hub would learn from the tire out West that chloroform was the best anesthetic. In operating he made the usual incision, and returned the gut if all was right. He then took silk, with the needle which he used for operating on the lacerated cervix, and encircled the hernial opening completely. He tied that so as to close it up perfectly. He did not like to trust the buried animal suture. He dissected out the sac in the usual manner and cut it off short, then took catgut and with that sewed the wound carefully in the usual manner until the wound was entirely closed except the skin, which he closed with two or three silkworm-gut sutures. He used no drainage tube. He wished to

strongly emphasize what Dr. Marey had emphasized, that the time for the drainage tube in the operation for hernia ought to cease.

DR. H. O. MARCY then exhibited to the Association some specimens of kangaroo tendon and explained the method of preparing the various animal sutures.

DR. W. J. ASDALE, of Pittsburg, said, with reference to the drainage tube, that he used it when in doubt what to do. He regarded the tube with many small perforations as a dangerous one. He followed the practice, where he used the drainage tube, of turning it at short intervals, every few hours—at any rate, at every visit.

DR. R. P. HALL, of Cincinnati, said that he had practised drainage in every case of abdominal section since October, 1887. He had never had occasion to regret placing the drainage tube. Some cases in which he placed the tube, feeling at the time that it was not necessary, would undoubtedly have died had the tube not been placed.

DR. E. E. MONTGOMERY, of Philadelphia, had for a long time been averse to introducing silk either into the wound or covering it up in the abdominal cavity. In re-operation upon a case a year or more after the first operation, he had found the silk still remained, and in some cases it was a source of irritation. He was strongly inclined to the use of the animal ligature. He had not had the opportunity to use kangaroo tendon, but had resorted to carefully prepared catgut. He considered the care of the instruments as a very important part of the technique of abdominal surgery, particularly the needles. He advocated cleansing the needle with a soapy towel, then cleaning it with benzin, and finally placing it in absolute alcohol. When the catgut and needles were ready for use they were placed in a tray and covered with alcohol. If the catgut is placed in water it softens and swells, and is somewhat difficult to tie; but from the alcohol it is hard, and when it is introduced it swells and fills up the track made by the needle. Dr. Wathen made a good point in regard to drainage. It is usually considered that drainage should be from the lowest portion of the abdomen; but if we look at the abdomen when it has been cleansed and the intestines have settled down, we will find that the liquid gravitates to the upper surface. He had no doubt but that many cases of intestinal adhesion were due to the fact that there was present a fluid which to a slight degree became infected sufficient to give rise to a slight superficial peritonitis and gluing together of the surface. In these cases drainage by gauze or by wick is oftentimes very efficient.

THIRD DAY—MORNING SESSION.

Discussion of papers by Dr. Wathen and Dr. Marcy resumed.

DR. W. W. POTTER, of Buffalo, said he had kept watch of Dr. Marcy's work in this direction, and had been somewhat familiar with his writings on the subject. His little treatise, published two years ago, upon the subject of hernia was a revelation to many with reference to the modern technique in the operation for hernia. Dr. Potter reported a case of ventral hernia upon which he had operated fourteen years ago with success.

DR. R. B. HALL, of Cincinnati, said he hoped that Dr. Marcy, in closing, would give in detail the method of closing the abdominal wound after operating for hernia—whether he advises and uses the kangaroo tendon in closing the peritoneum. He had operated a number of times, using catgut, and was disappointed in its results.

DR. J. H. CARSTENS, of Detroit, illustrated on the board the old-fashioned method of including all the tissues in one sweep, resulting frequently in hernia because too much of the peritoneum was included in the tissues taken up. He said that if you will take catgut or kangaroo tendon, or whatever you like, and sew, layer by layer, up to the skin, you will get perfect union; you get peritoneum together, you get fascia together, and you get no umbilical hernia. If you follow in the track of Lawson Tait, you will be astonished at the number of cases of umbilical hernia you will find; and if Mr. Tait would advance to the American plan and accept a little from us, and make use of the buried animal suture, he would very seldom have a case of hernia following an operation.

DR. R. T. MORRIS, of New York, wished to lay emphasis upon the danger of peritoneal hernia where the operation was performed with one suture, not bringing the different layers together successively.

DR. JAS. F. W. ROSS, of Toronto, said he regretted that we were not able at the present moment to decide the question between the method of taking peritoneum, skin, and fascia together, and the other method of suturing each separately. He had always adopted the single suture, taking up all the tissues, and up to the present time had only two cases of hernia. He wished to ask Dr. Marcy whether it had been experimentally proved that fibrous tissue unites to fibrous tissue, and can be traced absolutely as fibre in the scar; whether muscle unites to muscle, and can be traced as muscular tissue in the scar. On the surface, where we can see, we find it is not true skin in the scar.

DR. H. O. MARCY, closing the discussion, said he wished to speak more particularly in reference to the subject presented by Dr. Wathen. Dr. Wathen's excellent results showed him to be a very careful operator, but there were some points in which he did not agree with his method of operating. It is some twenty years since, as a pupil of Mr. Lister, Dr. Marcy first began the study of wound treatment. During this time he had carried on many careful bacteriological experiments in his own laboratory. He thought it would not be quite right to accept Dr. Wathen's conclusion that it is no longer antiseptic surgery, but aseptic surgery, although the aseptic wound is our highest ideal and is that to which we strive to bring the result.

We place far too much emphasis on what we call the atmospheric condition, and far too little on a dirty finger nail. He was not prepared to feel that we could afford to dispense with irrigation. Another point was, not to fill the wound with a dozen or twenty compression forceps, and then expect union by first intention.

In his last hundred laparatomies he had turned on an aseptic gas—oxygen gas—the moment he entered the abdominal cavity. It is a non-irritating gas, and displaces the column of infected air that would otherwise gain access to the wound.

Septic wounds are to be treated in one way, aseptic wounds in another; the latter should never have a drainage tube applied. He uses a far less number of drainage tubes than formerly, and insists upon it that the drainage tubes shall be smaller, shorter, and less in number.

In reference to sutures, silk is encysted; it is not absorbed. He had removed it after it had been in place three years. Silkworm gut is equivalent to wire. At the best the tissues encapsulate it; they do not utilize it by absorption or a replacement of other tissues. For many years he was satisfied with catgut, he prepared his own; but he was brought to feel that catgut was not reliable—may not be reliable. The best tendons which he had been able to find were those taken from the tail of the Australian kangaroo, after experimenting with tendons from the deer, moose, squirrel, caribou, buffalo, and other animals.

He illustrated on the board the anatomical conditions pertaining to umbilical hernia.

DR. X. O. WERDER, of Pittsburg, Pa., reported cases illustrating

SOME MOOT POINTS IN ECTOPIC GESTATION.

On the 23d of May last he operated on a patient, 38 years of age, mother of five children, in whom the menses had been regular up to six weeks previous to operation, during which

time there had been a constant flow of blood. A mass in Douglas' cul-de-sac had been made out, pushing the uterus to left of median line, soft, semi-fluctuating, of the size of a large orange. After intestines and omentum which were adherent to this mass had been separated, a blood tumor was found, and, several handfuls of blood coagula having been emptied out of the abdominal cavity, the ruptured, dilated right tube, containing a placenta, was brought up into the abdominal incision and ligated. The abdominal cavity had been perfectly free from blood previous to breaking into this mass, and there were no signs of any inflammatory trouble. There was no doubt that this tumor was a pelvic hematocele, caused by tubal pregnancy rupturing into the abdominal cavity. Rupture had undoubtedly occurred, as the history shows, about six weeks previous to operation.

This case illustrates, contrary to the teachings of Tait and others, that not all cases of intraperitoneal ruptures of tubal pregnancy prove fatal.

Two other cases seen by the author, of undoubted ruptured tubal pregnancy into the abdominal cavity, in which operation, urged as the only hope of recovery, was refused, also recovered, though convalescence was slow and tedious; in fact, the patients, though months have elapsed since occurrence of this intraperitoneal hemorrhage, are still more or less invalids.

In two other cases laparotomy was not performed until five days after rupture had taken place, when the patients were recovering from their condition of collapse and apparently improving. Out of a total of six cases of tubal pregnancy, therefore, in five recovery would have been probable without operation.

The author therefore concludes:

1. Intraperitoneal rupture is not always fatal; a large percentage recover without operation.
2. The convalescence of those recovering without operation, in his experience, is very slow and tedious, and often, perhaps, impossible without subsequent operation.
3. Laparotomy is to be recommended not only in cases before rupture, and after rupture for the purpose of stopping hemorrhage which threatens life, but also after bleeding has ceased, and even if hematocele has formed, because by it we remove all present and future danger, and insure our patient a very rapid and uninterrupted convalescence. Laparotomy has proven to be, if performed by skilful hands and with all necessary precautions, a perfectly safe operation.

The remaining tube should not be removed—*i.e.*, the tube not the seat of fetation—as has been recommended by some to prevent a recurrence of pregnancy in that tube, unless it

is markedly diseased. Removal of it became necessary only once in the four cases operated on for ectopic gestation by him. Two cases subsequently became pregnant, one has been delivered of two living children, and another is now in her seventh month of pregnancy.

DR. FLORIAN KRUG, of New York, gave a short historical sketch of the employment of

TRENDELENBURG'S POSTURE IN GYNECOLOGY.

Dr. Krug witnessed a suprapubic cystotomy done in this position by Dr. Willy Meyer, formerly Prof. Trendelenburg's assistant. He was immediately impressed with the great advantages this method offered for abdominal work and at once set out to make use of it. He has since done over one hundred and fifty laparatomies in this posture, and has induced a great many operators on this side of the Atlantic to adopt it.

Dr. Krug claimed the following advantages for the method: If the patient's pelvis is raised up so that the symphysis forms the highest point and the body comes on an incline of at least 45° to the horizontal, all the viscera of the abdominal cavity will gravitate toward the diaphragm and the pelvis become free and easy of access. The small intestines will hardly come into view and never trouble the operator during the operation. The operator is enabled to see everything that he is doing and need not grope about in the dark. All bleeding points are readily detected and tied. In weak and anemic patients the posture is a great advantage, preventing shock from acute anemia of the brain. In all his operations he had never found any objectionable point or disadvantage in this posture. There are different ways of putting the patient in this position, very simple and very complicated ones. In most of his operations he had used the head-rest of an operating table, to which cushions were fastened with straps. Trendelenburg himself has had a very complicated operating chair constructed which answers all requirements. Several new devices have been brought out in New York lately.

Dr. Krug had lately constructed a frame of galvanized iron which can be screwed to any laundry or operating table. The upper part of this frame is covered with sailing canvas, a material which is durable, easily sterilized, and cheap. Straps are provided for the knees and ankles of the patient, whose pelvis can, by a simple mechanical arrangement, be elevated to an angle of 45° to 60° , and lowered again if required. The frame can easily be carried or taken along in a street car, and can be used on any kind of a table; it is easily cleaned and sterilized, and it is cheap.

DR. R. T. MORRIS, of New York, said that those who had

once seen an operation in this position would appreciate fully the great value of Trendelenburg's invention.

DR. H. O. MARCY, of Boston, presented photographs showing a modification of the Trendelenburg chair.

DR. J. H. CARSTENS, of Detroit, spoke of the danger of atmospheric infection from the air rushing into the abdominal cavity, as had been stated was the case as soon as the abdominal walls were opened. He considered that that would be a decided objection to the Trendelenburg position.

DR. WILLY MEYER, of New York, replied to Dr. Carstens' objection that the danger from atmospheric infection would be very slight, certainly no greater than in amputations and similar open work, in which cases he always expected union by first intention. He then gave a demonstration of the Trendelenburg posture on a table after Trendelenburg's original model that he had imported.

DR. KRUG, in closing the discussion, said that ever since he had used the Trendelenburg posture he wondered how he ever got along before. He considered that it would be a pretty fine distinction between the amount of air which entered the abdominal cavity in this posture and that which enters in ordinary operations. He had used the operation in from one hundred and fifty to two hundred laparatomies, and was willing to match his results with those of anybody else who operates in a horizontal position.

DR. RUFUS B. HALL, of Cincinnati, read an essay upon

SUPPURATING CYSTS DEVELOPED FROM ADHERENT OVARIES
AFTER REPEATED ATTACKS OF INFLAMMATION; AND
SECONDARY OPERATIONS FOR REMOVAL OF
DOUBLE INTRALIGAMENTOUS CYST.

His conclusions were to the effect that, if these cases were operated upon early, just as soon as the physician was certain that nothing but an operation could bring the hoped-for relief, the operator would not be called upon to treat such desperate cases as those reported. No operator is justified in leaving an abdominal operation incomplete, except in malignant disease, for the reason that all other growths can be removed, and it should be done when once attempted. As long as the general practitioner persists in pursuing what he pleases to call conservative treatment in these cases, and keeps the patients under his care just as long as he can keep breath in them, and surgeons of the older class turn these patients from their consulting rooms as non-operative cases and thus defer it, or the cases made still more complicated by incomplete operations, men engaged in this special work will continue to see just such desperate cases. While this state of affairs exists, what can we hope for other than a high mortality in

these delayed cases, and who should be held responsible for the deaths?

DR. M. ROSENWASSER, of Cleveland, wished to protest against the assertion that these intestinal adhesions were due to the first operation. Intestinal adhesions are common to the broad ligament, and not to the cyst, and will be found there whether you operate the first time or the second time. He also wished to contradict the assertion that these cysts ought to be removed. It is better occasionally not to attempt removal. In some cases it is much better to stitch the cyst to the abdominal wall and drain, leaving the cyst wall alone.

DR. H. O. MARCY, of Boston, said that in a certain class of cases he had felt that we must stitch and drain. In another class of cases you can readily get behind it, close it down by suturing, and close your wound as in a simple operation.

DR. W. W. SEYMOUR, of Troy, called attention to the method, suggested originally by Hegar, of approaching these collections of pus through the ischio-rectal space. There is the advantage of not invading cavities not ordinarily septic.

DR. HALL, closing the discussion, stated that the first case illustrated very forcibly the advisability of an operation on these cases of repeated attacks of inflammation early, as early as it is found that nothing but an operation can cure them. These cases further illustrate what Dr. Price has said, that we get the worst class of cases among the best class of patients, those of refinement and culture.

THIRD DAY—AFTERNOON SESSION.

DR. CHARLES A. L. REED, of Cincinnati, presented

OBSERVATIONS ON THE SURGICAL MANAGEMENT OF PELVIC ABSCESS.

Pelvic abscess implies an accumulation of pus within the pelvis, but outside of the uterine appendages. Pus within the appendages is known either as pyo-salpinx or ovarian abscess, as the case may be. The terms are not interconvertible. The old pathology, which represented every accumulation of pus within the pelvis as cellular in its origin and location, was pernicious; but to deny the existence of such cases is wide of the truth, and to treat all intrapelvic pus cases as tubal or ovarian is likewise pernicious. Three illustrative cases were given in which the abdomen had been opened for pus tubes, but the appendages found free from disease. The pus was found within the cellular tissue and broad ligament, and was evacuated by incision along Poupert's ligaments. The suggestion for surgical management consists in adopting this operation as a line of practice. By this means we are enabled to treat the appendages, if diseased,

and we are enabled to place the field of operation under complete control.

DR. PAUL F. MUNDÉ, of New York, present by invitation, said that he felt diffident about rising to this question, although he had just said to Dr. Reed that it was a subject he felt very strongly upon and one which he had had considerable experience with. He quite agreed with Dr. Reed. There are many gentlemen who believe that laparotomy is the only thing. There are many who maintain that there is no such thing as pelvic abscess—abscess of the pelvic cellular tissue; everything must come from the tubes; everything is necessarily a pyosalpinx, and could only get into the pelvic tissues secondarily. He did not believe anything of the kind. He knew there were gentlemen who believed it. From his own experience he could see no reason why there should not be just as much plastic exudation in between the layers of the broad ligament, or wherever there is cellular tissue in the pelvis, as in any other portions of the body where there is cellular tissue. We have boils and abscesses in other parts of the body, and why should we not have them in the pelvis? Besides, we know we have effusions of blood in the pelvis. We know also that ovarian tumors and fibroid tumors develop in the broad ligament, and dissect up the peritoneum almost as far as the diaphragm. Why should plastic material from the blood not be exuded between the layers of the broad ligament and into the cellular tissue? That granted, why should it not break down and become pus? Lawson Tait has taught us to recognize these conditions of pus in the peritoneal cavity by bimanual examination without opening the abdominal cavity. The differential diagnosis is not always an easy one to make. Whenever a collection of plastic lymph in the pelvic cavity is immovable, it is usually extraperitoneal, and the same would apply to a fluctuating mass containing either pus or blood; when there is a limited movability to it or a limited movability to the uterus, particularly when pulled downward or upward, it was intraperitoneal.

DR. JOSEPH PRICE, of Philadelphia, presented

A PLEA FOR EARLY HYSTERECTOMY AND PUERPERAL HYSTERECTOMY.

The history of abdominal and pelvic surgery is all aglow with the heroic effort, the personal sacrifices of its pioneers. Surgical invention has greatly improved upon and simplified methods. Where the spirit of innovation has bungled the better genius of surgery has corrected. We are having cleanliness without the aid of chemical irritants and disinfectants. We are rapidly advancing to accept early operation as a dictum in pelvic and abdominal surgery. I can find no delight in so-called conservative methods. My experience

disproves and condemns them. It will become an axiom of surgery not to delay longer than to establish the fact that operation will be necessary at some time. This granted, the earlier such operation is done the fewer will be the complications, and all the dangers attending operation will be diminished or avoided. There will be a shorter operation, less handling of the parts, less shock, surgical and dynamic, and quicker convalescence.

The simple entering the abdomen is without danger in the hands of experienced men. Now, when surgical experience proves that the simpler the operation the less dangerous it is, and that the danger increases by exact gradation as the complications increase, what other conclusion to the argument is there than to demand early operation for conditions that in almost all cases eventuate seriously? This is especially true in fibroid tumors. The removal of the appendages is proven to be efficient, in a majority of cases, in controlling hemorrhage, just as it is the clinical testimony that in almost all cases of fibroid disease there is real disease of the ovary itself. In large tumors the ugly nature of the complications, combined with the gradually increasing discomfort, is such that makes delay criminal. We must operate before the patient is past help, if we would save her. Surgery as a last resort after temporizing has failed is no criterion of what surgery can accomplish, and is no measure or standard by which it may be judged.

DR. L. S. McMURTRY, of Louisville, read a paper on
THE ESSENTIAL QUESTION OF DRAINAGE IN PELVIC SURGERY.

At an executive session the following officers were elected :
President, Dr. A. Vander Veer, of Albany. *Vice-Presidents*, Dr. H. E. Hill, Saco, Me., and Dr. R. T. Morris, New York. *Secretary*, Dr. William Warren Potter, Buffalo. *Treasurer*, Dr. X. O. Werder, Pittsburg. *Executive Council*, Drs. C. A. L. Reed, Cincinnati; Lewis S. McMurtry, Louisville; George H. Robé, Baltimore; James F. W. Ross, Toronto; and William W. Seymour, Troy.

St. Louis was selected as the next place of meeting.

The following-named physicians were elected to Fellowship :
Ordinary : I. H. Cameron, Toronto, Ont.; Henry Gibbons, San Francisco, Cal.; John R. Haynes, Los Angeles, Cal.; Francis L. Haynes, Los Angeles, Cal.; J. B. S. Holmes, Rome, Ga.; James McCann, Pittsburg, Pa.; Willis G. Macdonald, Albany, N. Y.; R. B. Nevitt, Toronto, Ont.; Edward M. Pond, Rutland, Vt.; William Porter, Jr., Hartford, Conn.; E. Arnold Praeger, Nanaimo, B. C.; Charles N. Smith, Toledo, O.; Edwin Walker, Evansville, Ind. *Corresponding*: H. S. Griffin, Hamilton, Ont.; Henry T. Machell, Toronto, Ont.; Henry Howitt, Guelph, Ont.

TRANSACTIONS OF THE NEW YORK
OBSTETRICAL SOCIETY.

(Abstract.)

Stated Meeting, October 20th, 1891.

The President, DR. JOSEPH E. JANVRIN, in the Chair.

DR. MALCOLM McLEAN demonstrated before the Society a method by which the objectionable staining of the hands and nails after using the antiseptic solution of potassium permanganate and oxalic acid, recommended by Dr. Welch and others, of Johns Hopkins University, Baltimore, could be avoided. The results of a series of carefully prepared and elaborate experiments in the laboratories of Johns Hopkins had demonstrated the fact that none of the existing methods of disinfecting the hands and instruments in abdominal surgery could be relied upon. Solutions of bichloride of mercury as strong as 1:1,000 did not render the hands aseptic. Colonies of bacteria could be demonstrated, within a few moments, upon the fields supposed to have been sterilized. A combination of potassium permanganate and oxalic acid had been found the only safeguard to be relied upon, and this preparation left the hands in such an unsightly condition (which remained for days) that it proved a decided objection. He had found that by using hyposulphite of soda this staining could be prevented, and the potash and oxalic acid, so valuable as a means of lessening the risks of infection in the peritoneal cavity, could be utilized unobjectionably. The hands were to be first washed in a five-per-cent solution of potassium permanganate, then in a solution of hyposulphite of soda one to sixteen, and finally in oxalic acid one to thirty-two. These proportions were necessary to secure the desired chemical reaction. The hyposulphite of soda did not diminish the antiseptic action.

DR. McLEAN showed a specimen of

A PAPILLOMATOUS GROWTH,

taken by operation from the posterior pelvic region, behind the cul-de-sac of Douglas. The patient, Mrs. S., aged 37, and married, had contracted syphilis, according to the statement of the family physician, through her husband ten years ago. Some eighteen months ago she noticed an enlargement of the abdomen and her general health began to fail. There occurred swelling of the feet and ankles, dyspnea, and progressive weakness. The case was seen by a gynecologist, a diag-

nosis of ovarian tumor made, and operation advised. In June last she came under the professional care of the speaker. Her general condition was bad, the abdomen very greatly enlarged, and many pressure symptoms present. On palpation the abdomen was found to show fluctuation, with dullness. Examination showed the uterus high up and fixed. On the left side a mass was apparent to the touch, which was thought to be a tumor. The abdomen was tapped, as a compromise measure, and fifty-five pounds of fluid escaped. After the fluid was withdrawn a tumor could be plainly felt in the left ovarian region. On Saturday last he had done a laparotomy upon this patient. He found, on opening the cavity, a cyst wall very adherent to surrounding structures. On opening the sac a considerable quantity of straw-colored fluid escaped, revealing a second cyst, which was also opened. The bladder had been pushed up above the pubes, and the uterus also forced upward. Posterior to the uterus, in the cul-de-sac of Douglas, he had found a large papillomatous growth, part of which he had removed, as shown in the specimen. The speaker considered that he had made an error in attempting to dissect up the peritoneum when he should have gone directly into the cyst wall. The patient survived the immediate effects of the operation, was still doing well, and the further progress of the case would be reported later.

DR. EDEBOHLS showed

A WOODEN SLAT ROD FROM A WINDOW SHUTTER,

eleven inches long, removed from the vagina and peritoneal cavity of a lady whom he had seen in consultation during the present month. The woman, Mrs. C., on October 7th fell from the window of her room, striking against the blind of the basement window below, the slat rod penetrating the vagina and breaking off in situ. She got up and walked unassisted to her room. Her family physician was called and attempted to remove the piece of wood by traction, but found it impossible because of the resistance offered by the slat staples fixed in the rod. The piece of wood had pierced the anterior vaginal wall between the bladder and uterus. With patience and careful manipulation the stick was removed. The urine drawn before and after the operation, as well as examination with the finger in the wound and catheter in the bladder, showed the latter viscus to have escaped injury. Eleven inches of the stick had penetrated the peritoneal cavity, the remaining four being in the vagina and projecting from it. There was no evidence, through the sense of smell, touch, or visual perception, that the intestines had been injured. For these reasons laparotomy, which was considered, was not resorted to. The wound of entrance was

packed with strips of iodoform gauze and the vagina filled with the same material. Acute peritonitis developed twelve hours later, and the patient died. No autopsy was permitted.

DR. MCGINNIS presented

TWO NEW INTRA-UTERINE ELECTRODES,

devised to afford a less expensive electrode for the very costly one, made of platinum, of Apostoli. The first electrode shown consisted of the ordinary insulated stem with the end made of block tin instead of platinum. Block tin would permit of the use of quite high intensities of current, and Messrs. Waite & Bartlett had offered to guarantee for them a capacity to withstand as many as one hundred and fifty milliamperes. The tip was very flexible and could be bent easily and in any direction. The second electrode shown differed from the first only in the fact that the tips could be unscrewed, and one stem could be used with many sizes of tips. The Apostoli platinum electrode costs from \$30 to \$40 now, while this of the speaker only costs \$1.50.

DR. TUTTLE showed

A SPECIMEN REMOVED BY OPERATION IN A CASE OF RUPTURED
TUBAL PREGNANCY AT THE EIGHTH WEEK.

The patient, a married woman of middle age, had borne several children during her nineteen years of married life. Two years ago she suffered from uterine hemorrhage, and subsequently a trachelorrhaphy was done for her. One month ago, after having missed a menstrual period, her breasts became tender and enlarged, and soon after she suffered from pain in the left iliac region. On Saturday last she was brought to Roosevelt Hospital, having been attacked with excruciating pain while riding in a street car, which had caused her to faint. When examined on admission, her pulse was 147, temperature 97°, and she was suffering intense pain. The abdomen was soft and boggy, and was tympanitic on percussion; the cervix uteri soft, patulous, and enlarged. There was a dark bloody discharge. The breasts contained no fluid. Laparotomy was done after a diagnosis of ruptured tubal pregnancy. A large hematoma was evacuated, and the left tube found to be the site of rupture. The tube, and left ovary also, were removed; the right ovary and tube, being found free from disease, were not touched. The patient, a large woman weighing one hundred and eighty pounds, had done well since the operation. This was the nineteenth case he had operated upon, and the fifth since June last seen at Roosevelt Hospital.

Dr. MENDÉ showed to the Society

THIRTY-FOUR SUBMUCOUS AND INTERSTITIAL FIBROIDS,

varying in size from a fist to a hickory-nut, removed from one patient at a single sitting, by enucleation and traction. He had seen this patient first two years ago, and at that time had removed a sloughing fibroid mass by traction. Six months ago she returned and he had found a renewal of the growth in multiple form. The largest tumor presented at the external os, which was widely dilated, as shown in Fig. 1. He had used the fingers and broad-bladed forceps in removing the tumors. The patient had made an uneventful recovery, leaving his private hospital on the twelfth day after the operation.



FIG. 1.



FIG. 2.

The second specimen shown by Dr. Mundé, a pediculated fibroid, he had removed by laparotomy from its position posterior to the uterus, and between that organ and the rectum. The patient, a young woman, had suffered much pain from the tumor, and defecation was seriously interfered with by mechanical pressure; hence he had operated. On entering the abdominal cavity he had found another tumor attached to the other horn of the uterus, which he also removed, as well as the right ovary which contained a large blood clot and numerous small cysts. Recovery.

The third specimen illustrated tubercular disease of the tubes and ovaries. There was ascites with the general peritoneal tuberculosis. It was the fifth case he had operated upon of this character. All had recovered from the imme-

diate effects of the operation, though the tubercular disease invariably had returned somewhere else, generally in the pulmonary tissue. His experience did not justify the sanguine expectations of others as to the ultimate cure of these cases by operation.

The fourth specimen exhibited by Dr. Mundé represented a condition of disease which, in the experience of the speaker, was unique. The specimen was that of a fibroid tumor removed from the anterior wall of the urethra of a patient at the New York Polyclinic. He had seen innumerable caruncles and local hypertrophy of tissue in the urethral wall, but never before a fibrous tumor here. Medical literature upon the subject bore him out in the statement that it was a very rare condition. The tumor, as large as a small hickory-nut, had given the patient no discomfort or pain, but she had discovered its existence and wished it removed, which had been done without any difficulty.

In the discussion following the exhibition of specimens, beginning with Dr. McLean's method of overcoming staining from the use of permanganate of potash, Dr. JACOBUS asked the question if the solution of sodium hyposulphite should be a saturated one. Dr. McLEAN replied that the proportions must be definite (as stated above) in order to get the proper chemical reaction.

Dr. HANKS, referring to the electrodes of Dr. McGinnis, remarked that they were very convenient on account of their great flexibility, and desirable from their cheapness, but he had found that the thread to the block-tin tip screw would not hold, due, he thought, to the softness of the metal, and not to be remedied except by making the entire electrode of one piece. His electrode had become useless because of this defect.

Dr. GOELET urged the same objection, emphasizing his remarks with the statement that the tip might come off in the uterine cavity. It should be fixed firmly.

Dr. W. GILL WYLIE drew attention, in discussing the case of ectopic pregnancy reported by Dr. Tuttle, to the fact that the frequency of the condition, as illustrated in the statement that nineteen cases had been operated upon at Roosevelt, was undoubtedly often overlooked and many women lost thereby. Especially was it desirable to recognize such cases early. He knew full well the difficulties and uncertainties attending a positive diagnosis. He had operated several times, but in only two cases could he remember that he felt positive as to the diagnosis, and in one of these the diagnosis had been made by Dr. Jacobus, for whom he had operated. He believed that many of the cases of hemato-salpinx and pyosalpinx originated in this way.

In connection with the case of fibroid tumor removed by laparotomy by Dr. Mundé from the region between the uterus and rectum, DR. WYLIE thought it would have been wise to remove both tubes and ovaries, instead of one as done, since it is a well-known fact that such growths have a tendency to recur, and he thought the ovary left would be likely to become diseased.

DR. MUNDÉ, in reply, stated that he only removed the one ovary because it was unmistakably diseased; otherwise he should not have touched either of them. The youth of the patient, he thought, entitled her to the benefit of a doubt which would not result in unsexing her.

DR. HANKS asked Dr. Mundé how he had treated the pedicle. DR. MUNDÉ answered that he had transfixed the pedicle and tied it in two sections, as in ovariectomy. Besides, he had united the edges of the peritoneal covering of the stumps by silk sutures passed below the ligature, and thus had effectually controlled the occurrence of future hemorrhages.

DR. EDEBOHLS, commenting upon the specimen exhibited of tubercular disease of the tubes and ovaries, stated that his personal experience with such cases had not led to brilliant results. He had operated upon eight cases. In three cases, in which he had found the tubes affected with a pyo-salpinx, he had removed the tubes and ovaries. In the other five cases he had made a simple incision and treated them by irrigation and drainage. In the last case he had irrigated with a solution of bichloride of mercury 1:5,000. In four cases operated upon more than a year ago, all had since died with secondary tuberculosis of the lungs, which condition had not been present before. The most gratifying experience he could recall in this class of cases was that of a patient upon whom he had operated fifteen months ago. The patient was almost moribund at the time, and an operation was scarcely justifiable on this account. The condition of general tubercular infiltration was found upon opening the cavity, and the opening closed without drainage. The tubes were thickly diseased, but were not removed. The woman recovered and is well to-day and attending to her household duties. He believed that if, on inspection, the tubes were found thickly studded with disease and contained fluid or pus, they should be removed. If they did not contain fluid and there was no greater tubercular disease of the tubes than elsewhere, they should be left. He did not believe the statements recently published that the operation was a curative one.

DR. LEE differed in his experience as to the results of operation for these cases. His cases had done well. Two patients had called at his office during that very day who had

been operated upon for tubercular disease of the ovaries and tubes, and both had gotten well. In one of these two cases the operation was done five years ago. In all cases where the peritoneum had been found studded with tubercles, the patients had died. If, after the tubes and ovaries are removed, good drainage is kept up sufficiently long, the cases do well. Drainage should be continued for two or more months in some cases. The formative stage, that of deposits of miliary tubercles, is never of the peritoneum itself. The tubes and ovaries should be removed.

DR. MUNDÉ believed, too, in the value of drainage, but in his last case there had been nothing to drain after the first twenty-four hours, and the tube acted as an irritant.

DR. WYLIE thought that adhesive cases did not drain well. He had devised a bulbous-end drainage tube which the patient could wear sitting up or moving about. It could be worn for weeks and weeks, doing no harm if cleansed occasionally.

The paper of the evening was read by DR. CHARLES CARROLL LEE. It was entitled

THE ULTIMATE RESULTS OF REMOVAL OF THE UTERINE
APPENDAGES.

He had selected the above subject as a result of reflections suggested by a paper read before the recent Congress of American Physicians at Washington, D. C.¹ The discussion following the reading of the paper had proven a source of deep chagrin to him, in that it had manifested a spirit of sharp criticism, and in some instances of strong condemnation, of the present status of laparotomy. The sentiments of many of the speakers, reflecting, as they did, a feeling of more or less profound disappointment with the results of laparotomy, had convinced him that something must be radically wrong, and that an evident necessity existed for the clearer demarcation of cases appropriate and inappropriate for operation. He did not think that in the selection of cases for operation general considerations were entitled to much weight. The question as to the results of laparotomy in unsexing patients was of very little moment and should have little or no weight. Patients with tubes and ovaries sufficiently diseased to require removal were already sterile by reason of that fact, and sexual desire, through painful coition and local suffering, was, in many instances, utterly extinguished. He thought that a decision in any case rested upon two questions and their answers: 1. Is removal really necessary in this case? 2. Will the ultimate results prove benefi-

¹ See page 1298.

cial to the patient? Individuals of a distinctly neurotic temperament, particularly hysterical and epileptic patients, with so few exceptions as only to prove the rule more emphatically true, were decidedly not benefited by laparotomy. He acknowledged that many cases of epilepsy, the attacks occurring at the menstrual period and associated with symptoms of ovarian derangement, afforded apparently the strongest indications that benefit would result from operation, in that there seemed to exist a relationship of cause and effect; but he did not think such cases appropriate. He did not believe statistics would show a half dozen such cases with authenticated cures. Dysmenorrhea did not demand laparotomy in the very great majority of cases, and never *per se*. In the last few years he had seen more than one hundred cases, not one of them appropriate for operation. Painful menstruation, dependent upon flexions, stenosis, or the established neuralgic habit, was not likely to be cured by operation. One of the factors he thought responsible for the disappointment attendant upon laparotomy at times, and bringing discredit upon the operation, was to be found in the fact that many men were better operators than diagnosticians. An ideal corrective for this condition would be the limitation of operations to a few skilled experts. Such a course was self-evidently impossible, but the principle might, with great advantage, be adopted of only removing organs known positively to be diseased, such decisions being reached only after consultation with experts. In order to determine accurately the results ultimately to the patient, cases should be systematically followed up for years. The relief from laparotomy was often only experienced by the patient one or two years after the operation. Ten years ago, impressed with the advantages of the idea, as he saw it exemplified in a clinic abroad, he had determined to keep track systematically of all cases operated upon, and with that end in view he had prepared a table of questions to be sent annually to every patient, the answers to be placed on file. Many patients did not answer at all or could not be traced; others had given imperfect answers. He had, however, full and accurate reports from thirty-six cases operated upon from five to ten years ago. This table had been brought up to within six months of the present date, and no case was included which had not been operated upon at least five years ago.¹ The work and trouble involved had been amply repaid by the lessons learned. Among other general observations resulting from a study of these records, he had become convinced that the complete ablation of all ovarian tissue was much more important than of the tubes. Relief of local pain had not occurred in some

¹ See page 1307.

instances until one or two years after operation; then it had disappeared. In six of the thirty-six cases menstruation had persisted for some time after operation. In six cases attacks of perimetritis had occurred after the operation, in two acute cystitis, and in one hemorrhage so severe and exhausting as to require transfusion. With regard to the remote effects upon the nervous system, the results had been good, with the exception of one case, one of the two in which cystitis occurred. The good results had, however, been slow in development. In two epileptic cases the patients were afterwards as bad as before, so far as the epilepsy was concerned. He had been able to learn little which was definite or of value as to the effect of removal of the ovaries upon the sexual appetite. The question blanks were, as a rule, returned unanswered in this particular. He did not attach much importance to the matter in any event. With reference to mental depression as a result of operation, he had not observed such conditions except as a result of other associated conditions of disease not affected by the operation. His patients had made no laments, except in cases in which complications existed, perpetuating ill health, which was the cause of complaints and depression. On this point he took issue with Dr. Lusk, whose paper he had heard at the Washington Congress.

DR. HANKS, in opening the discussion, remarked that such statistics as were involved in Dr. Lee's paper represented in their collection a great amount of trouble and difficulty, but that the example was one worthy to be followed by every laparatomist. He concurred with the writer in his conclusions, and with emphasis. There was evidently a strong tendency toward conservatism among operators, and many conditions formerly operated upon were no longer subjected to the knife. One such example was catarrhal salpingitis. He referred, in speaking of some of the bad results of operation, to a case of hysterorrhaphy which he had done some years ago, the patient having returned to his office to-day for the relief of a hernia which had resulted.

DR. MUNDÉ advocated a position of conservatism. That he was consistent and had been so in such advocacy he thought was demonstrated by the fact that he had only done fifty-two laparatomies where with less conservatism he had had opportunities to do hundreds. He avoids it where he does not find actual, decided disease on physical examination—by no means an easy matter in many instances. He had operated upon three cases in which he could not detect the disease beforehand, the constant pain being the only indication for operation, and had found the ovaries completely destroyed by effusion of blood into their stroma (hematoma of the ovary), thus justifying their removal. He agreed in the main with

Dr. Lee in his statement as to neurotic cases, and yet he had operated upon and cured three patients—young women who had suffered from cataleptiform and epileptiform attacks. One of these cases was operated upon seven years ago. This case was pronounced by Dr. Allan McLane Hamilton to be one of “sclerosis of the cord,” and had been bed-ridden eight years. She was able to walk quite well a few weeks after operation. The case was published in full some years ago. In one of his epileptic cases there were no attacks for six months; then several occurred during the next six months, since which time the patient has been entirely free from them. In this case he had refused to operate at first, but had finally consented and had found both ovaries cirrhotic. He believed epilepsy, however, to be a very doubtful indication. In connection with the subject of removal of the ovaries, he called attention to an experience which he had met with in the development of fibroid tumor of the uterus following removal of the appendages, which he had seen in two of his own cases, and in one operated on by Hegar and seen by him (Mundé) two years later. In some of his cases pain had persisted a year or more, then disappearing. Menstruation had also continued for a time in five or six cases. He thought patients should always be warned of this possible persistence of pain and menstrual flow before the operation is done, in order to avoid subsequent disappointment.

DR. WYLIE had given the subject of the paper of the evening careful thought and consideration. He had been personally so criticised and abused, because of the frequency with which he had operated, that he had been led to ask himself if he was really in error. After a careful analysis of his results in something approaching or quite four hundred and fifty cases, he saw no reason to alter his opinion on the subject. If anything, he was less cautious than he was when he began to operate—a course justified by the results of his operations. He selected his cases, however, although in many instances he operated where other physicians had refused, not because the necessity did not exist, but because they did not like to take the chances in that particular case. In spite of such cases, rejected by other physicians, his mortality had been a low one, and in the last three hundred less than three per cent. He had never operated for dysmenorrhea or hemorrhage alone, and only rarely for nervous troubles—less than a dozen cases altogether. One case of nervous trouble was worthy of mention. The patient had melancholia symptoms, with visual delusions; “her stomach was rotten,” among others. She was seen by Spitzka, who stated that the brain was not diseased *per se*, but that he believed the symptoms were reflex. The speaker had refused to operate at first.

Some months later, the patient having remained in *statu quo*, if not worse, Spitzka was asked to see the case again, and upon repeating his former opinion he (Wylie) had operated. Ten days after the operation the patient had recovered her reason, and had remained well ever since. He did not believe any arbitrary law existed by which to determine indications in all cases. Of his cases, more than seventy-five per cent have been pyo-salpinx, excluding cases operated upon to stop growth of fibroids. In ninety-eight per cent the tubes were occluded. Among the results he had noticed as following the operation, and which had escaped notice, was a hyperesthesia of the genitals in young women. Intercourse became painful, the vagina appeared to undergo atrophy, and if the woman be married her life's happiness is marred. This condition he had noted as marked in certain cases. In such cases (young married women) he leaves a small portion of one ovary, which prevents this consequence. The tubes are points of disease in the great majority of cases. Portions of the ovary cannot always be left, especially if there is associated disease of the uterus. It is unsafe to leave any ovarian tissue in such cases, and it can only be done in young women with a healthy uterus.

DR. POLK's experiences had been confirmatory of the views of Dr. Lee. He did not think the indications for operation at all clearly or positively formulated yet. Much of this chaotic confusion arose from the non-separation of the two classes of cases: those operated upon for disease and those in whom it was intended to induce the menopause. He thought that patients with active exaggerated reflexes—the neurotic class—were decidedly benefited in certain cases after a considerable period of time had elapsed. Age he considered a factor of much importance in deciding upon an operation. Young married women were not so likely to be benefited, and were apt to be much disappointed with the results. When it could be done, he thought it was decidedly advisable to leave the patient so that pregnancy was possible. He believed that inspection of the appendages through exploratory laparotomy should be the final appeal in reaching a decision.

DR. FRY, of Washington, was called upon by the President to express his views upon the subject. He could add nothing of interest, he said, to a discussion participated in by acknowledged authorities in this field. The outside American faculty looked to New York as the Mecca of information, and he had nothing to add, except an expression of his pleasure and profit in having had an opportunity to listen to the views of those present, which were in the line of a radical necessity in the field of work discussed—that of clearing up the subject.

DR. GOELET remarked that he had expected, from his knowledge of the character of the writer of the evening's paper, a fair and honest statement of the situation. He believed that the best operators were becoming more and more conservative and doing less and less work in laparotomy. He had no doubt but that much of the discredit attaching to the results was due to the fact that too many men were operating. The work should be restricted to experts. His experience with the results of operations for the removal of appendages was largely limited to cases which had come to him for relief, which they had not gotten from operation. In many cases the suffering had been greater than before laparotomy, though in no such case that he had seen had the operation been done more than three years, and in many less.

DR. HANKS desired to repeat to the Society the statement of a physician present, apropos of the subject under discussion, that at the hospital with which this physician was connected fifty patients had called, during his term of service, for trusses for hernia the result of laparotomy.

DR. LEE closed the discussion. He had limited his observations to the number of cases quoted, as being full in detail and incontestable in the facts gathered, so as to give absolutely accurate conclusions. No other cases of his scores of operations had been included. He believed exploratory procedures always justifiable in doubtful cases. His idea in presenting the paper he had read was to place the New York Obstetrical Society on record as deprecating the indiscriminate doing of miscellaneous operations for removal of the appendages, without positive indications in demonstrable evidences of disease.

TRANSACTIONS OF THE GERMAN GYNECOLOGICAL ASSOCIATION.

Fourth Meeting, held at Bonn.

[Continued from page 1278.]

SAENGER (Leipzig) read a paper on

DECIDUOMAS.

Little that is certain and much that is doubtful is known thus far about neoplasms of the uterine decidua. A synopsis of the new formations of the decidua hitherto described comprises merely two cases by R. Maier, nine cases by Küstner, and one case by Klotz, of Innsbruck. In Maier's first case a lobulated tumor, nine centimetres long and three centi-

metres thick, was expelled without hemorrhage before the ovum in a premature labor in the sixth month. The time at which the growth, which undoubtedly was built up of decidual cell elements, had formed was placed by Maier in the first weeks of pregnancy. As the slight vascularization was said to prove, the tumor's growth had subsequently been arrested, and it had undergone partial fatty degeneration by which its expulsion was favored. The author was much inclined to assume that it represented the hyperplastically altered decidua of a second ovum, a decidual mole. (During the meeting Hegar stated that this specimen came from him, and that the patient in question had subsequently died of carcinoma of the uterus. No mention is made of this fact in Maier's paper. Hegar did not say of what form of carcinoma and how long after the expulsion of the tumor the patient had died.) With reference to his second case, a tubular tumor, four centimetres long, two and five-tenth centimetres in diameter, which had lined the cervix and hung from the os, Maier held that it was a decidual tumor of the cervical mucosa which perhaps had extended into the body of the uterus. Küstner defines deciduomas as tumors of the uterine mucosa which form on the remains of the true decidua of pregnancy. Only when we take tumor to mean a circumscribed swelling projecting above the level of the mucous membrane could Küstner be in the right with reference to some of his cases; a true new formation of decidual tissue, a decidual neoplasm, did not exist in any of them. Unquestionably, six of his cases were nothing but retained remnants of decidua in inflammatory and retrogressive alteration, with or without chorionic villi, which were removed in one case fifteen days, in four cases two to four weeks, after abortion; in another case, in which this was done after ten months, still no new formation of decidual tissue had taken place. In the other three cases the condition must have been endometritis glandulo-interstitialis polyposa, whose sole relation to "deciduoma" lay in the fact that an abortion had preceded the evacuation of the uterus three months, one year, and four years respectively.

The author agreed with Küstner in denying the occurrence of fibrinous uterine polypi without the admixture of decidual and placental tissue. There remains only the very carefully examined case of Klotz, in which, two years after the last delivery, profuse hemorrhage led to the removal from the uterus of a spongy tumor the size of a goose's egg and sessile on a broad base. The tumor proved to be composed of perfect decidual tissue, with connective tissue and glandular epithelial elements in an atypical arrangement. Klotz called his decidual tumor an adenoma, but wishes to include it among the connective-tissue formations.

Meantime, however, an entirely new type of decidual tumors has become known in the malignant deciduoma, also called decidual sarcoma, which the author first described in 1889. Since then, Pfeifer, without being acquainted with this report, has published another case under the same title of malignant deciduoma. Pfeifer at the same time made the important statement that Chiari also considers three cases to be malignant deciduoma which he had described in a paper published in 1877 as carcinoma of the fundus and corpus uteri that had appeared in connection with preceding labors. Hence there are now on record five well-observed cases of this new formation which agreed perfectly in their clinical course, though the symptoms were differently interpreted—hemorrhage and offensive discharge being ascribed to retention of decomposing membranes or to sloughing carcinoma; metastases in the bones and lungs, as in the author's case, to tuberculosis. The agreement extends even to the duration of the disease, all the cases ending fatally in from six to seven months after delivery. Anatomically, however, the author's case differed from those of Chiari in one essential point—the new formations did not occupy mainly the internal wall of the uterine cavity, but were sprinkled through the substance of the uterine muscle in the shape of nodules. These resembled in color and form pomegranates when cut open, projected mushroom-like into the uterine cavity, which was quite bare of mucous membrane as proved by naked-eye and microscopic examination. From the internal os upward the interior of the uterus was invested with a kind of cicatrix of the muscular structure, in which were embedded small round and spindle cells resembling sarcoma. This condition forces us to the conclusion that the remains of the decidua left after the evacuation of the uterus, though forming the matrix of the neoplasm, were unable to produce a new mucous membrane. The nodules contained smaller and larger hemorrhagic foci, and their fundamental elements were unmistakable decidua cells having an epithelioid, polymorphous character. They were embedded in a distinct network at whose intersecting points were single and multiple nuclei, here and there intermingled with giant cells with as many as thirteen nuclei. The cells were arranged partly in pseudo-alveolar groups, partly in the form of a close-meshed reticulum with broad trabeculae. The latter were nothing but bundles of uterine muscle eaten into by decidua cells, while the meshes of the network represented vascular lumina, mainly small veins of the muscularis uteri. This would explain the numerous apoplexies, especially in the midst of the nodules, owing to rhexis of the vessel wall formed ultimately of nothing but decidua cells. Exactly the same structure was found in the metastases, even those of

the lungs, in which, particularly at the margin of the nodules, unquestionable decidua-like cells were present within the alveoli by the side of desquamated pulmonary endothelia.

Although we find some reference to the occurrence of decidua-like cells in uterine sarcoma in the papers of Gusserow and Eberth, as well as those of Hegar and R. Maier, and although C. Ruge plainly calls the decidua cell the physiological example of the sarcoma cell, still a malignant metastatic neoplasm of the puerperal uterus consisting altogether of decidua cells—that is, a sarcoma constructed entirely of decidua cells—is a new conception oncologically.

In a general pathological sense the author cannot consider the term “deciduoma” as correct, preferring, in analogy with the terms sarcoma globo-cellulare, fuso-cellulare, etc., to choose the designation “sarcoma deciduo-cellulare uteri,” or perhaps “deciduo-sarcoma,” as a sarcomatous neoplasm composed of that variety of the connective tissue whose cell type is the decidua cell. These two forms, moreover, are the only types of true new formations of the decidua thus far determined; with them perhaps may be classed certain circumscribed and diffuse hyperplasias of the decidual connective tissue as granuloma deciduo-cellulare or deciduale.

In view of Chiari's reclassification of his cases, it will be necessary in future to differentiate primary carcinoma of the body of the uterus occurring in connection with the puerperium from “sarcoma deciduo-cellulare.” It is not impossible that at least a great part of the reported cases of carcinosarcoma may have been clinically and anatomically identical with sarcoma deciduo-cellulare. This would tend to confirm Olshausen's assertion that carcinoma and sarcoma of the body of the uterus mutually exclude each other.

Finally, as regards the etiology of sarcoma deciduo-cellulare, its probable infectious character seems indicated by two facts—the great similarity of the tumor with mycosis fungoides of the skin, and the infectious (septic ?) disease of the endometrium observed thus far in the beginning of all cases.

Let us hope that further cases may be recognized during life, and the patients saved by timely total extirpation of the uterus.

VEIT had likewise seen cases in which a malignant uterine tumor followed abortion. He interprets these cases, not as malignant adenomas, but as carcinomas or sarcomas in which pregnancy ensued, and after abortion the originally present tumor continued to grow.

KÄLTENBACH interpreted one of the cases otherwise: the malignant degeneration of the ovum (myxoma chorii) led to a neoplastic infection of the uterus, and later to metastases. He referred to similar cases described by him and by Leopold. Säger's case he thinks an alveolar sarcoma.

ERNST WERTHEIM (Prague) read a paper on

GONORRHEA.

So long as Bumm's assertion was undisputed that Neisser's gonococcus could penetrate only into cylindrical epithelium, it was natural that the possibility of a gonococcus-peritonitis was denied despite all the clinical factors in favor of it. Bumm himself has drawn from this peculiarity of the gonococcus the following conclusions: There is no gonococcus-peritonitis; gonorrheal pus reaching the peritoneum acts there only as a foreign body, becomes encysted, but never leads to a true inflammation; besides, gonococci have at no time been found in the inflammatory product of a peritonitis. If a peritonitis arises as a consequence of ascending gonorrhea, we must assume, as in all deep-seated inflammations occurring as a complication of gonorrheal processes, a mixed infection, that is, a secondary infection with the ordinary pyogenic micro-organisms.

However, it has been shown that the gonococcus is able to penetrate even through several layers of pavement epithelium. Menge calls attention to the repeated demonstration of gonococci in pus from the knee joint; this proves that the synovial membrane—a tissue resembling the peritoneum in histological structure, and particularly in its epithelial investment—can suffer gonorrheal infection; that the gonococci are true pus producers, and in this respect are closely related to those cocci which often prove dangerous to the peritoneum; moreover, the fact that the fungi of gonorrhea have hitherto never been found in the inflammatory products of peritonitis is no proof against the possibility of a gonococcus-peritonitis. In like manner the absence of inflammatory symptoms after the outflow of pus containing gonococci upon the peritoneum, which frequently happens in salpingotomy, can be readily explained. In the first place, because antiseptics are made use of; in the second, because it is doubtful whether the gonococci present in the stagnant pus of a pyo-salpinx have not lost their virulence.

I have resorted to experiments on animals to determine the question, Can gonococci produce peritonitis in animals under the same conditions as the ordinary pyogenous micro-organisms?

Before making the experiments bearing on this question, it was necessary, in the first place, to become familiar with the process of pure cultivation of the bacteria; in the second place, to determine whether the gonococci found in the pus of gonorrheal tubes were still virulent. For even if it were proved that gonococci in general may cause inflammation of the peritoneum, it might be possible that those

present in tubal pus could not effect this, owing to loss of virulence.

The experimental cultures and transmissions to man made for this purpose tend to confirm Bumm and Neisser's assertion that the gonococcus is really the cause of gonorrhea. This confirmation is all the more valuable because Bumm's results have not been verified; on the contrary, doubts have been expressed with reference to Neisser's gonococcus. Moreover, the experiments yielded a number of additional facts about the biology of Neisser's gonococcus.

The main results of my labor may be expressed as follows:

1. The gonococcus can be very easily cultivated in a pure form by the plate process, the medium used being human blood serum. It is solidified by the addition of sterile agar-agar. In this way pure cultures of the gonococcus can be obtained in three days.

2. The pure cultures obtained by the plate method, when transferred to the human urethra, cause a typical gonococcus-gonorrhea, as proved by five experiments.

3. The employment of plate cultures shows:

- (a) That the gonococcus develops also in the depth of the medium.

- (b) That it is not at all necessary that the germs be sprinkled thickly on the medium; that, in fact, a colony develops from each single germ. Puncture and stroke cultures flourished alike.

4. Human blood serum is by far the best medium for the gonococcus; but weak cultures can also be obtained on animal blood serum and on agar-agar, even from the direct application of gonorrheal pus.

5. Well-developed gonococcus cultures on human blood serum can be propagated, even after four or five weeks, by inoculation on fresh human blood serum, provided drying is guarded against.

6. The virulence is by no means rapidly lost by cultivation on artificial media. A culture continued for four weeks on human blood serum proved actively virulent when transferred to the human urethra.

7. The growth of the gonococcus is more luxuriant when oxygen is excluded than when it has access.

I may state at once that I have succeeded thus far, in all cases of purulent salpingitis which I have examined for gonococci by cultivation, in demonstrating the fungi even when sparsely present. The plate method offers great advantages over the microscopic demonstration hitherto alone used. In the first place, the demonstration by cultivation is much handier—an advantage which all will appreciate who have ever looked for gonococci in tubal pus under the microscope. Sec-

ondly, the method is far more sensitive. Every single gonococcus present in the transferred pus becomes the starting point of a colony in the medium. For this reason a positive result is obtained even when that by the microscope was negative.

Thus far I have examined six cases in which I have succeeded in demonstrating the gonococcus by means of cultivation. In one of these I could discover neither gonococci nor other fungi with the microscope, despite prolonged search. Cultivation on the plate showed ten to twelve colonies of gonococci, a proof of the sensitiveness of the method. Pure cultures obtained from three of these cases were inoculated on the human urethra, and in every case a typical gonorrhea resulted.

This proves that the gonococci present in the tubal pus of these cases had preserved their virulence—a fact which is of importance with reference to a specific peritonitis eventually possible by the gonococcus of Neisser.

When gonococci had been recognized as such by the microscope, when they were lying within the pus cells in their characteristic form and size in greater or smaller swarms, and reacted perfectly to Gram's staining method, there were still sceptics enough who doubted the value of this proof of the existence of a gonorrheal salpingitis. But all these objections have now been robbed of their force; the pure cultivation of the gonococci from tubal pus, and the successful production of typical urethral gonorrhea by the inoculation of these cultures upon the human urethra, have placed the gonorrheal nature of these diseases on a foundation which answers every requirement of bacteriology.

Under what conditions is it possible to cause a peritonitis with the ordinary pyogenous micro-organisms? From all experiments in this direction, however contradictory the results may have been otherwise, we learn that the transfer of the pyogenous cocci to the animal peritoneum is certain to cause peritonitis only when either the absorptive power of the peritoneum is weakened by mechanical or chemical noxa, or when the injected cocci are accompanied by some nutrient material which is absorbed with difficulty, if at all. Having convinced myself by personal experiments with *staphylococcus pyogenes aureus* and *streptococcus pyogenes* that their injection into the abdominal cavity of the animals was nearly always followed by a fatal peritonitis when firm nutrient material (for instance, agar-agar) was added, while the injection of relatively large quantities of bouillon cultures was usually innocuous, I tried whether Neisser's gonococcus could produce a peritonitis under like conditions.

All the experiments were made in this way: The abdominal

cavity of the animal was opened with perfect asepsis; a pure culture of gonococci, removed by a platinum loop, together with a lentil-sized piece of the nutrient medium was introduced, and the abdominal cavity closed carefully with sterilized silk. The wound was covered with iodoform-collodion.

Even the first experiments, made with different animals, showed that the question could be answered in the affirmative, although the peritoneum of various animals was not equally receptive. White mice responded best, then guinea-pigs, next rabbits and rats, while dogs were almost refractory. No other animals were experimented with.

White mice having been found most appropriate, the experiments were made always on a series of ten animals on the same day in the above-mentioned manner, five being infected with pure cultures of gonococci, five with equally large pieces of sterile human blood serum. These parallel experiments were to decide whether it was not the irritation of the foreign body alone which caused the peritonitis. On the succeeding days one of each of the two series of animals was killed, so that in five days all the animals were dissected. The results will be briefly described.

After twenty-four hours the incision was found well healing. From the entire parietal and visceral peritoneum, even at points distant from the injected culture, a sero-purulent deposit could be stripped off. Here and there slight hyperemia and small ecchymoses. Well-stained, vigorous gonococci were present, partly in the closely packed pus cells of the deposit, partly in free masses. Inoculation of the exudation on human blood serum furnished a pure culture of gonococci.

On microscopic examination of sections embedded in celloidin, the entire surface of the peritoneum, especially near the injected culture, was found covered with a more or less thick layer of pus cells; both in and between them were large numbers of gonococci, some closely packed, some further apart. The tissue of the peritoneum enclosed many pus cells. At many points it was detached from the muscular layer by the infiltrations in the subserosa. These pus cells likewise enclosed numerous gonococci. Long strings of gonococci, here and there spreading over larger areas, could be seen from the surface extending under the serosa or penetrating deeper into the tissue between the several muscular bundles. At specially affected points the impression was gained that the lymph spaces were completely filled with gonococci. The individual cocci were clearly demarcated and beautifully stained. Along with these masses of gonococci penetrating into the tissue we found an occasional accumulation of pus cells, by which the muscular bundles were separated. The original culture was everywhere closely surrounded by pus cells, and crossed in all

directions by strings of pus cells and swarms of gonococci. The serosa of the intestine resembled the parietal peritoneum. After forty-eight hours the inflammatory process of the peritoneum was further advanced, the deposit of pus was thicker, adhesions occurred here and there between the parietal and visceral peritoneum, the infiltration and the quantity of the gonococci in the tissue spaces had increased. On the other hand, we found in the gonococci present in the superficial deposit signs of involution—indistinct form and poor staining. The cultivation from the exudation on human blood serum furnished a pure culture of gonococci.

The result on the following days showed that the suppuration does not increase. Even after seventy-two hours gonococci could be demonstrated only sparsely. The cultivation from the exudation on human blood serum furnished a very scantily growing colony, which could be invigorated only after repeated inoculation into human blood serum.

On the fourth day after inoculation no more gonococci could be demonstrated by the microscope, and inoculation of human blood serum was negative, but frequent slight adhesions were found between the abdominal wall and the intestine.

In the animals injected with sterile blood serum the peritoneum was not hyperemic; it was dry, and no exudation could be stripped off. In the slight transudation normally present in every healthy peritoneum barely a pus cell was found; hardly any were present even around the blood serum introduced. Pus cells were found only about the incision, but very much scantier than at the corresponding point of the animals inoculated with gonococci. Bacteriological examination showed the absence of all bacteria.

This series of experiments was made altogether four times, and the above-mentioned results were observed in each. Hence after forty-eight hours the process gradually decreases. Death never occurred in consequence of the inoculation; but the infected animals, compared with the sterile ones, were off their feed and depressed in the first days.

The results show that we had to deal with a true inflammation of the peritoneum, caused by the gonococci as such. The purulent exudation with the numerous intracellular cocci, the penetration of the gonococci into the tissue as far as the superficial layers of the muscular structure, and the corresponding development of infiltrations, can only be interpreted as caused by the vital activity of the gonococci. That the irritation of the foreign body as such is not the cause of this process is shown by the parallel experiments. The gonococci multiply upon and in the peritoneum. The positive proof of this was furnished by taking a gonococcus culture, ten days

old, which contained only individuals that were stained badly, and inoculating the peritoneum with it. After twenty-four hours numerous young, well-stained gonococci were always present beside the old.

The regular attainment of a pure cultivation of gonococci from the peritoneal deposit proved that the peritonitis was not caused by another bacterium. It follows, therefore, that we can produce an experimental peritonitis in animals by the gonococcus of Neisser under the same conditions as by other pyogenic micro-organisms. Despite the non-receptivity of the mucous membranes, the peritoneum of some animals forms within certain limits, a favorable soil for the gonococcus.

In general it is quite correct to hesitate to apply the results gained by experiments on animals unqualifiedly to human pathology. With reference to the gonococcus, however, the contrary is the case. When the gonococci can cause a peritonitis in animals whose mucous membranes are resistant toward them, and become aggressive toward the tissue of the peritoneum, how much more easily and intensely will they do so on the peritoneum of the human subject, to which they are alone adapted!

From the above-described relation of the gonococci to the peritoneum we may deduce some important conclusions as to their biology. Above all, proof is furnished that the gonococcus can penetrate into pavement epithelium—a fact demonstrated before on pavement epithelium in layers. Moreover, we learn that the gonococcus can also penetrate into connective tissue, where, following the tissue and lymph spaces, it spreads in similar streaks and hives as the other pyogenous micro-organisms. This is a fact of prime importance. Heretofore all the deeper inflammations of the tissues occurring in the course of gonorrheal diseases were ascribed to mixed infection. While it is certainly correct that this is often the case, it is not necessary to assume it in every case, for all these inflammations—peri-urethral abscesses, suppurating lymph glands, parametric infiltrations, perimetritic exudations and adhesions, and inflammatory alterations of the ovaries—when they occur as a sequel of infection with the gonococcus, are explained in the simplest manner by the gonococcus itself. The idea of a mixed infection has been assumed for gonorrhea only because the gonococcus was said not to possess the power to penetrate deeper into the tissue and to excite inflammation there.

It is remarkable, too, that it was never possible to discover in tubal pus any other pyogenous bacteria besides the gonococcus, though advanced inflammatory alterations were present in the tubes, ovaries, and peritoneum. Altogether I can refer to sixteen cases in which I have been able to demon-

strate gonococci in tubal pus. In ten of these cases that proof was furnished by the microscope, in six by plate culture. I have never found other bacteria than the gonococcus. We are not justified in assuming that the gonococci had crowded out and survived the ordinary pyogenous microbes, since the latter possess far greater power of resistance—a fact pointed out also by Menge. This fact, that tubal pus never contains other pyogenous microbes than the gonococcus, is the more remarkable because some authors (Bumm, Zweifel) have asserted that preceding infection with gonorrhea even predisposes to a secondary infection. This caused me to investigate whether a medium exhausted by the gonococcus is suitable for the nutrition of the other pyogenous bacteria. Sterile liquefied human blood serum which had served for fifteen days for a pure cultivation of the gonococcus was sterilized by being subjected for two hours to a temperature of 131° to 140° F., and then infected with streptococcus pyogenes and with staphylococcus pyogenes aureus. The former did not propagate at all in such medium, as shown by further inoculations; the latter grew, but not as freely as in fresh human blood serum.

Judging from these experiments, I cannot assent to Zweifel's statement that the accumulation of old gonococcus pus furnishes a particular nutrient medium for pyogenic and septic micro-organisms; the contrary seems to be the case. These facts alone show that it is necessary that the expression "mixed infection," hitherto so freely used, should be restricted at least to those cases in which the presence of other pyogenic microbes has been demonstrated after a proved preceding infection by gonococci. However, a fortunate accident enabled me to furnish direct proof, by two cases recently operated at the clinic, that inflammation of the ovaries terminating in suppuration of the stroma—*i.e.*, ovarian abscess—may be caused by Neisser's gonococcus. The first case was a left purulent salpingitis; the abdominal ostium was patulous, and the fimbriae were partly adherent to the ovary, which was the size of a hen's egg and its tissue thickened throughout. On section the ovary proved to contain a cavity about the size of a nut, which was filled with thick yellow pus and invested with a yellow layer like a pyogenic membrane. In the tubal pus no bacteria could be demonstrated either by the microscope or by cultivation, but the pus of the ovarian abscess contained numerous gonococci with all their characteristic peculiarities. Cultivation on human blood serum furnished pure cultures of the gonococcus but no other bacteria. As there was absolutely no communication between the tube and the cavity in the ovary, the gonococci must have penetrated through the ovarian tissue into the depth, where

they set up suppuration. Microscopic examination, deferred for lack of time, will undoubtedly demonstrate the gonococci in the tissue of the ovary. The second case, which was operated May 13th, was a girl, aged 16, with bilateral gonorrheal pyo-salpinx. Both tubes very much thickened and firmly adherent to the peritoneum of the neighboring organs and the pelvic wall. The abdominal orifices of both tubes were closed, the ampullary ends distended. Numerous gonococci in the creamy pus of both sides. Both ovaries the size of a hen's egg and tensely filled with pus. Almost the whole ovarian tissue had melted into pus. Numerous gonococci demonstrable in the pus of the right ovary by the microscope and by cultivation; no other bacteria. No bacteria of any kind demonstrable in the pus of the left ovary either by the microscope or by cultivation. Here, too, no communication existed between the lumen of the tube and the ovarian abscesses. Therefore, if we classify ovarian abscesses according to their etiology, we must distinguish puerperal and gonorrheal types. It is quite correct that ovarian abscess is frequently of puerperal origin. In Schauta's clinic three undoubtedly puerperal ovarian abscesses were operated on within the last six months. In all these cases the streptococcus pyogenes and no other micro-organism was found.

SAENGER (Leipzig) read a paper on

THE PROPHYLAXIS OF GONORRHEAL INFECTION.

Since gonorrheal infection of the female sexual organs stands next to the puerperal septic form in its importance and spread, it is high time to attack it more energetically by prophylactic measures which have given such excellent results on a related field—ophthalmo-blennorrhea. Of course, these efforts will meet with far greater difficulties than those which attended the prophylaxis of puerperal infection outside of institutions; but this should stimulate us all the more in the hope of improving the present sad conditions.

A prophylactic system against gonorrheal infection should include:

I. Measures for the prevention of infection:

1. Strict supervision of open and energetic persecution of secret prostitution as the main source of infection.

2. More prolonged duration of the treatment of infected prostitutes by physicians skilled in gynecology.

3. Compulsory use of sublimate irrigations of the vagina, at least by such prostitutes as are discharged from treatment.

(These irrigations should at all events be taught to prostitutes by the police surgeons in their office hours. They form a most efficient prophylactic measure. In the absence of pregnancy two daily vaginal irrigations of a 1:1,000 solution

can be used for months without detriment. They may be prescribed in tablet form or in alcoholic solution, accompanied by proper instruction.)

4. Instead of the former proposition made by Haussmann, to instil a two-per-cent nitrate of silver solution into the male urethra after impure coition, irrigations with sublimate should be recommended.

5. More rational and prolonged treatment of men infected with gonorrhea, pointing out the obstinate character of the disease and its possible consequences after marriage in all protracted and grave cases.

6. Medical prohibition of marriage so long as the disease is not demonstrably cured.

(A law imposing penalties, on complaint of the injured person, on delinquents who, knowing themselves to be affected with recent sexual disease, contract marriage in opposition to medical caution, would be a rational and humane demand. It should also be possible, on complaint, to punish a person who, after impure coition while married, is guilty of the same misdemeanor of a conscious infection of the wife. The same law would deal with persons [prostitutes] who, affected with recent gonorrheal affection, spread the disease contrary to medical prohibition.)

II. Prophylaxis for children.

Mothers, especially of the poorer classes, affected with gonorrheal discharge should be instructed as to the possible infection of children (girls). Strict isolation of diseased children, particularly in hospitals.

III. Measures for the cure of slight and prevention of grave forms of gonorrheal infection in women.

1. In the non-pregnant condition. Contrary to what prevails in the male, we are here able to act directly on those parts which generally form the first seat of the infection, and proceed energetically with the strongest poisons, especially sublimate. Vulvitis and urethritis play a minor part clinically; they are most rapidly curable. Pointed condylomata should always be completely ablated in one sitting. Purulent Bartholinian glands should invariably be totally extirpated. Although the vagina is rarely affected, care should be taken to remove the secretion accumulated in it by sublimate or chloride of zinc irrigations and rinsing through the speculum. Owing to the frequency and importance of mixed infection with other pyogenous microbes, such sublimate irrigations are indicated in all purulent discharges, whether gonorrheal or not. We should particularly guard against abrasion of the mucosa of the body of the uterus in recent and subacute gonorrheal endometritis. Caustic treatment with mild chloride of zinc solutions—the stronger are apt to cause stenosis—

is suitable only for uteri with dilated cervix. In nulliparae with narrow cervix, all the secretion should be washed and wiped from the vagina and cervix, and the latter dilated with iodoformed laminaria tents under strict precautions, irrigated with sublimate and chloride of zinc, and kept open by wide aseptic glass tubes held in situ by iodoform gauze in the vaginal vault.

By such and similar measures it is possible to cure many recent and even chronic cases, and prevent extension to the adnexa. Should the latter be acutely affected, the patients must be kept in bed for weeks after the rapidly subsiding initial symptoms; the severest forms of salpingo-oöphoritis, pelvic peritonitis, and pyo-salpinx get well completely under purely expectant treatment. Only a small number of cases in which the symptoms do not abate finally require laparotomy.

2. In the gravid condition. Measures for the prevention of ophthalmia in the child, of extension to the body of the uterus and the adnexa in the late puerperium, of gonorrhoeic-septic mixed infection in the early puerperium.

Gravid women should not be trusted with sublimate, as it is absorbed by the vagina. Instead, the physician should frequently irrigate with soapsuds and wipe with sublimate through the speculum. For irrigation chloride of zinc or creolin may be ordered.

In conclusion the author requested, if Martin's proposition be adopted to make salpingo-oöphorectomy in disease of the adnexa the subject for the next meeting, to include the question, What part does gonorrhoeal infection take in the causation of disease of the adnexa?

Kocks (Bonn) read a paper on

THE CONNECTION OF MÜLLER'S DUCT WITH THE PRONEPHROS.

Since J. Müller discovered and described the pronephros in amphibia, and Bidder correctly interpreted its glomerulus, numerous papers have appeared on this interesting subject, which in general confirm the views of the above investigators. Deviations were noted only in the mode of development of the duct of the pronephros and its derivatives in a solid or tubular form, and to this day the results of investigators do not agree. With reference to the origin of Müller's duct likewise the results differ, in so far as Müller's duct seems to form both independently and by division of the pronephric duct. But since it could be observed in animals of the same species that both modes of origin occur side by side, as Fürbringer demonstrated in salamanders, this difference lost its value, though we can give no explanation for this double mode of development.

The present state of the question may be summed up by saying that Müller's duct develops either by division of the pronephric duct into the ducts of Wolff and Müller, or that it develops in connection with the pronephric duct.

Moreover, it is still an open question from which blastoderm the pronephros and its duct are derived. Recent investigations by Hensen, Flemming, and Count Spee place the development of the system in the ectoderm, while heretofore the mesoderm was looked upon as its source. These differences, however, have not as much interest for us as gynecologists as the question whether Müller's duct exhibits a direct connection in its proximal segment with the pronephric duct in mammals and hence also in man. If such a connection were shown, we might be able to understand the formation of the tubal funnel without a *formatio ad hoc*, and would besides get a glimpse of other conditions. Thus, for instance, a multiple funnel formation would be more simply explained than by the assumption that the abnormality owes its origin to an arrested development; nephrostoms then would become both normal and supernumerary funnels.

Balfour and Sedgwick were the first to describe Müller's duct in birds as formed of three successive constrictions of the pronephros. They look upon this formation in the chick as the pronephros of the bird. The most anterior of the three openings becomes the permanent opening of Müller's duct. In elasmobranchs (rays and sharks), according to the same investigators, the permanent opening of Müller's duct corresponds to the original opening of the pronephric duct, in so far as its proximal part becomes the anterior part of Müller's duct, while the distal part is split off. In amphibia (salamanders), according to Balfour, the permanent opening of Müller's duct develops independently of the pronephros, somewhat caudad of it. The pronephros, however, occurs not only in Lacertidæ, but also, as Wiedersheim states, in the higher Amniotæ.

For the otter (*Lutra vulgaris*), which I examined on account of their encapsulated ovaries, I can confirm Wiedersheim's statement as to the presence of a pronephros, as well as the connection, found by Balfour and Sedgwick in the lower vertebrates, of the pronephric duct with the abdominal ostium of Müller's duct; and I may add, furthermore, that the ovarian fimbria likewise owes its origin to this connection.

In an embryo of the otter, 3 cm. in length, which I divided into serial sections, I found above the mesonephros, in a median direction from Müller's duct, rudiments of a pronephros, and could observe how a rudimentary canal here unites directly with the tubal orifice, so that in this mammal, differing from the Selachians (Balfour, Semper) in which an

entire nephrostom of the pronephric duct becomes the tubal ostium, only *that* half does so which corresponds with Mueller's duct.

This finding justifies us in looking upon the abdominal orifice of the tube as definitely proved to originate from the nephrostom of the pronephros, in mammals in general and in man in particular. My preparations furthermore indicate that a differentiation of the pronephric duct into one of Müller and one of Wolff takes place throughout its entire length, hence inclusive of the uppermost nephrostom.

The pronephric duct in more distal sections appears as the Müllerian duct. This would prove the origin of the female genital tract in mammals and man directly from the ectoderm, if the observations made by Flemming and Count Spee should be confirmed.

From a practical point of view it may be remarked that according to these investigations cystic degeneration of the hilus and the adjacent parts of the broad ligament can be not only parovarian cysts but also pronephric cysts.

Another interesting question obtains an unexpected answer by my above-mentioned observations on female otters. The ovarian fimbria, whose histogenetic importance is emphasized by Waldeyer, is continued in otters as a fine canal into the hilus of the ovary. This canal, however, is nothing but the uppermost remnant of the Wolffian duct, *i.e.*, one-half of the pronephric duct; and the ovarian fimbria of mammals and man is merely the product of traction caused by this upper connection of the Wolffian and Müllerian ducts, by a fimbria leading to the obliterated abdominal ostium of the embryonal Wolffian duct. The canal found in the female otter passes further as a solid cellular cord in the hilus of the ovary, but keeps its distal lumen, becoming the secondary Müllerian or Leydig's duct in amphibia, the Wolffian duct in higher mammals and man. This would explain the nature of the ovarian fimbria in connection with the explanation of the development of the tubal funnel from the uppermost pronephrostom.

If I add, furthermore, that I have succeeded in studying in the embryo of the otter the formation of the ovarian capsules which in these animals completely separate the ovary from the peritoneal cavity, and that the tubal peritoneum secondarily surrounds the ovary, we have thereby a homology between the two sexes of mammals which can hardly be found more complete anywhere else. The two halves of the pronephric duct lose their function as embryonal ureters and assume the conduction of the sexual products—the one half for the male and the other half for the female. We may add that probably in hermaphroditic ancestors of the higher vertebrates they functionated side by side.

In the further course of the paper this homology was made still plainer, and attention was directed to the importance of the surviving hermaphrodite fishes for the explanation of the two ducts in mammals and man.

Kocks (Bonn) read a paper on

THE CORRELATION OF THE GROWTH OF RUDIMENTARY ORGANS
AND THEIR PARENT TISSUE.

He referred to the law underlying the correlated development of rudiments and the parent tissue, which law he calls that "of the correlative growth of rudimentary organs or rudimentary parts and their parent tissue." This law explains the fact that the remnants of the Wolffian duct are found at the introitus vaginae, are absent in the middle of the vagina, and again occur at the uterus and further upward, so that the author's view of Skene's canals as Gartner's ducts finds an explanation. He also pointed to the investigations of Tourneux and Legay, who have demonstrated the merging of the Wolffian into the Müllerian ducts. At the same time the author called attention to the contradictions to be found in the results of Max Schüller and Van Ackeren, as well as to Overdick's view rejected by Max Schüller himself. The descriptions given by Dohrn, however, fit well with Tourneux and Legay's statements, only that Skene's canal is to be looked upon as the lower separated portion of Wolff's duct.

This question has recently been considered by Nagel. Reference was made to this author and to the observation by C. Ruge; also to the questions by Olshausen at the meeting of the Society for Obstetrics and Gynecology at Berlin, April 24th, 1891. Nagel observed epithelial ducts in the distal segment only once in a human embryo twelve and one-half centimetres long; these he traced to Gartner's ducts. They were situated in the region of the spindle-shaped, thickened portion of the proximal segment. Whether the Wolffian merge into the Müllerian in Tourneux and Legay's sense cannot be learned from Nagel's investigations. The author thinks we must interpret Rathke's explanation and the canals observed by Ruge between rectum and urogenital sinus as a passage of the Müllerian ducts into the cloaca of the urogenital sinus, but deeper. An analogous view must be taken of the third canal in the urethra (Schüller's) and of the diverticula on Gartner's ducts in hogs, cattle, and man.

The author furthermore called attention to a number of rudiments in the human body which serve to illustrate his doctrine, which he recognizes as a law.

Kocks (Bonn) read a paper on

THE NATURE AND SURGICAL TREATMENT OF TUBERCULAR PERITONITIS.

He reported a case operated upon by him in which there was an effusion into the peritoneal cavity, most probably of a tubercular nature, though there were no tubercles on the peritoneum. He pointed out that it was possible that such effusions may result when a tubercular process exists at some other point than the peritoneum or the serosa of the intestine, provided it be near the peritoneal cavity so that this may be implicated by the collateral hyperemia or directly by toxins irritating it. Attention was called to Löffler's diphtheria bacilli, which, without entering the pleural cavity, may cause effusions in it. A similar process may be observed in the knee joint, where tubercular effusions may take place by bone tuberculosis without direct immigration of the bacilli into the synovia.

With reference to treatment, the author called attention to the fact that relapses were often observed when the wound was immediately closed after laparotomy, so that in one case even three operations were required. For this reason, in the above-mentioned case he had not closed the entire wound, but left the lower angle wide open and drained with iodoform gauze. The course was very favorable, and a recurrence of the effusion seems to the author to be less likely than when the wound is closed at once.

C. VON WILD (Kassel) read a paper on

FAT HERNIE.

He reported two cases operated upon by him, viz., herniæ of omental fat, one situated at the umbilicus, the other above it in the median line. Both had formed in the first pregnancy of the patient, and caused many disturbances which were removed by the operation.

The first patient was 38 years old, IIIpara. An umbilical hernia formed in the second half of the first pregnancy in 1874. The hernia was the size of a walnut, could be replaced, and the pregnancy went to term. Since 1880, after the last delivery, the patient suffered from "stomach ache," i.e., drawing pains in the region of the stomach, which occurred during or soon after eating. Violent eructations frequently came on after meals. The hernia was still replaceable, and pained only when prolapsed. Since 1886 replacement was impossible and the hernia was very tender to the touch. The "stomach aches" increased greatly, spasmodic attacks occurred after eating, and the eructations changed at times into prolonged choking sensations. The pains were also produced by elevation of the arms, by sitting on low stools, and by the

recumbent position, so that the patient had to pass the night in a half-reclining posture. The treatment consisted in various dietetic cures; later the patient was for years under gynecological treatment. The troubles steadily increased.

Examination showed the following: Patient vigorous and well nourished, with well-developed adipose tissue; at the umbilicus a tumor covered with bluish-red skin projected barely one centimetre above the surface, its base about as large as a dollar. The slightest touch caused violent pains in the abdomen, especially in the region of the stomach. Under anesthesia the tumor was easily reduced.

Operation.—Division of the skin covering the hernia, prolongation of the incision upward and downward. A mass of fat was found, about the size of a small apple, with a pedicle the thickness of two fingers leading down through a ring formed by the tense fascia; under this ring was a second portion of the hernia, a mass of fat of equal size between fascia and peritoneum, whose pedicle passed through a folded ring of the peritoneum into the abdominal cavity. Total excision of the mass of fat, closure of the peritoneum and fascia with a running catgut suture, of the wound by deep and superficial silk sutures. Uninterrupted recovery.

The patient was cured of her trouble immediately after operation; she could lie down and raise her arms without pain. For some months she suffered much from nervousness, but this soon passed off.

This case appears especially notable because it was left fifteen years without operation, though the patient had consulted numerous celebrated physicians, neither concealing the hernia nor her sufferings. To this long existence of the hernia the great nervousness is to be ascribed. Hence the fact should be emphasized that such omental herniæ, even if replaceable, should be operated on. The same opinion has been expressed with reference to umbilical herniæ containing coils of intestine by surgeons such as Lawson Tait, König, Von Bergmann. For a reposition may be only apparent, the hernia being crowded behind the ring of the fascia into the space formed between the latter and the peritoneum; then the hernia seems to be repositioned, while it is merely changed into a pro-peritoneal one. The presence of the hernia causes much inconvenience to the patients—nerve irritation, restricted peristalsis, and shallow respiration.

The second patient was 28 years old and had been twice delivered. The last labor was four years ago, since which time she had suffered from symptoms similar to the preceding case. On examination only one sensitive spot was discovered about one and a half inches above the umbilicus; the "stomach ache" was produced only by certain motions. The

diagnosis was omental hernia in the linea alba. On incision the fascia had to be opened and the mass of fat removed by enucleation. The peritoneum and fascia were closed by dropped silk sutures. The superficial wound was closed as in Case I. Union by first intention. Sutures removed on the eleventh day. Symptoms completely relieved.

The only similar case in the literature the author has been able to find is one described by Sanger in the *Centralblatt f. Gyn.*, 1890, No. 27.

The development of these hernie is probably due to distention during pregnancy, a portion of the omentum breaking through the peritoneum and remaining outside. The cessation of the troubles during pregnancy can be explained by the support afforded by the growing uterus, which prevents the dragging. These cases are perhaps not very rare in women who have passed through many pregnancies, and careful examination might reveal such hernie as the cause of obscure "stomach aches."

EBERHART (Cologne) exhibited a specimen which could only be

AN OVARIAN PREGNANCY

which had undergone early suppuration. The patient was a medium-sized, tolerably well-nourished woman who had never been seriously sick. Menses first appeared at 14 years, regular but scanty; after her sixteenth year they became irregular and still more scanty. During the past year they have recurred every three to four weeks and were followed by leucorrhea. Has probably suffered from gonorrhea; patient states that she had vesical catarrh after her first delivery. First labor September, 1887: second, May, 1888, abortion in the fourth month; third, October, 1889. Last menses June 6th, 1890. A few days later patient felt pregnant, judging from morning sickness and craving for certain dishes. July 30th, 1890, that is, six weeks later, she suffered from back-ache and for two days had hemorrhages with labor-like pains. She is unable to describe what passed from her. She claims to have been feverish for a week, though her temperature had not been taken. This was probably when the ovum began to suppurate. The author saw the patient first on August 27th, and noted the following: Vulva closing well, no descensus, vagina moderately wide, vaginal portion not thickened, uterus slightly enlarged, rather soft, anteflexed, somewhat displaced to the right. At its left and behind is a somewhat movable, firmly elastic tumor the size of a large hen's egg. Right adnexa seem normal. Examination under anesthesia, made a few days later, showed the right ovary to be fixed. Diagnosis, ectopic pregnancy of the tubo-ovarian variety. The presence

of colostrum in the breasts seemed to favor this diagnosis. Laparotomy September 8th. Incision in the linea alba. Nothing special to be noted except a small tear in the broad ligament, which was closed with two button sutures. September 9th, at 2 P.M., a bloody discharge set in which lasted two days; it again recurred from the 13th to the 15th, but was slight. Nothing else abnormal.

Anatomy of the Tumor.—The tumor, about the size of a hen's egg, can be readily recognized as the ovary with the tube, about the size of the little finger, passing over it. After incision into the ovary, in which several follicles can be distinctly recognized, thin fluid, slimy pus mixed with thicker particles is evacuated. Unfortunately this was thrown away by mistake and could not be examined under the microscope. The interior of the ovary shows a rough, granular surface. The tube, which was easily separated from the ovary, was cut open lengthwise and found to be impervious at both ends and filled with brittle masses. Microscopic examination shows these to be epithelial masses due to the atresia at the ends. Sections of the ovary exhibited the following, from within outward: Distinct villi with tortuous fine vessels; decidua cells, which Ruge claims as the only certain criterion of extra-uterine pregnancy, could not be demonstrated. Perhaps they might have been discovered if the examination had been made earlier, but it was not done until after eight months. These villi were followed by a layer containing numerous cells which gradually passed into the ovarian stroma.

As the menses, which generally occurred every three or four weeks, had been passed for six weeks, as the woman had exhibited subjective signs of pregnancy, as colostrum was present in the breasts and labor-like pains occurred during the first hemorrhage after six weeks, and as ovarian elements and villi were positively found in the ovisac, this case can be interpreted only as an ovarian pregnancy which had undergone early suppuration. The diagnosis of a simple ovarian abscess could not be maintained. Of course it is remarkable that suppuration should have occurred so early, but this may have followed secondarily on a partial disease (suppurated follicles) of this ovary.

As the tube belonging to this ovary was found occluded at both ends, this case is of further interest because an extra-uterine transmigration of the spermatozooids must have taken place.

In conclusion, thanks were given to Prof. Köster, who had taken the trouble to confirm the above findings.

GLAESER (Breslau) read a paper on

DERMATOL, A SUBSTITUTE FOR IODOFORM.

This is a new dry antiseptic, first largely used at the Breslau

female clinic, which has proved a very useful and in many cases even an excellent remedy. It has a yellow color similar to iodoform, but it is odorless, insoluble, and permanent, so that it can be sterilized in the steam apparatus. The author first employed dermatol on small cutaneous wounds and older laparotomy wounds. A very firm crust formed very rapidly, under which healing progressed without any secretion. Also in recent laparotomy wounds the slight secretion under dermatol was noted; no sign of irritation could be seen in the neighborhood.

In wounds with larger defects closure is more rapid than under any other treatment. Everywhere a pronounced drying effect of dermatol is perceptible, which at times is so marked that the gauze dressing adheres to the granulations. Owing to this fact, covering with silk is an advantage, as under it skin is formed very quickly. In various applications, perineal wounds, within the uterus, in total extirpations, on dropped pedicles of myomas, for several weeks in a case of extra-uterine pregnancy in which the ovisac could not be removed, in exudations, and in a large tubercular peritoneal abscess, dermatol proved absolutely innocuous, thus agreeing with the results of the experiments of the inventors. There was never any undesirable local effect of the drug. Therefore the author can fully recommend dermatol for such and similar cases. The results obtained with dermatol in infectious catarrhs of the genital tract were less favorable and in part negative. Here the drug proved powerless, owing to its insolubility and the slight stimulation it exerts upon the tissues. Its effect is doubtful in tubercular abscesses, the material on hand having been insufficient. Chemically, dermatol consists of gallic acid in an insoluble combination with bismuth.

The author's conclusions are: 1. Dermatol is absolutely innocuous. 2. It causes no irritation. 3. It acts antiseptically, first chemically by its composition; second, by its marked drying effects removing the soil on which the bacteria flourish. 4. It is a very good healing agent for wounds. 5. The drug is convenient, odorless, and unchangeable, resisting light and air, and steam sterilization. 6. It is twenty-five per cent cheaper than iodoform.

A. MARTIN (Berlin) read a paper on

TUBAL AND OVARIAN RESECTION.

By this term the author understands, in the necessary removal of the diseased adnexa, the preservation of the unaffected portions or the opening of the atresic tube, which opening is to be kept patulous by an appropriate suture. In connection with two tables of twenty-one cases of the former and twenty-four cases of the latter operation, the author reported

the later results obtained by this method. On the whole the procedure seems to have found few adherents. At the last meeting, as is well known, Skutsch had been able to report on a similar procedure. In Zweifel's report several such cases are mentioned. The tables show that the resection is well borne, and that the fear is not justified that the parts of the ovaries and tubes left behind would rapidly lead to renewed disease. On the other hand, all the patients have continued to menstruate and at least have retained the possibility of bearing children. The latter is of particular importance, as most of these patients are still young. The author proposed to the Association to make the final results of the operations on the adnexa the subject of a collective investigation.

WIEDOW (Freiburg) read a paper entitled

THE CONTRACTED PELVIS AS A SIGN OF DEGENERATION.

On the strength of his investigations he had arrived at the conclusion that a deformed pelvis in its various pathological forms is frequently to be considered as the expression of an anomaly of the entire system.

Among thirty-five women examined by him with this view he found: 1. In four cases cretinism. 2. In ten cases associated anomalies of the skeleton such as abnormal formation of the skull, projecting forehead and depressed root of the nose, prognathous jaws, irregular formation and position of the teeth, curvature of the spine and its extremities. 3. In seven cases the women were diminutive. 4. In eleven cases associated anomalies in the sexual organs, defective development of the mammary glands, of the external genitals, of the uterus; in one case there was an accessory nipple. 5. In three cases the presence of a large goitre. The noxa which give rise to these anomalies may be inherent in the germ, become attached to it, or affect the organism in its intra-uterine or extra-uterine development.

KUMPF (Vienna) read a paper on

THE MANUAL TREATMENT OF FIXED RETRODEVIATIONS OF THE UTERUS BY THURE BRANDT'S METHOD.

The author had received several months' instruction in the winter of 1888-89 by Brandt, and after two years' practice, in which he had treated nearly five hundred cases of female diseases by this method, he has gathered sufficient experience to entitle him to form a positive opinion. An effective personal employment of the method by the physician is possible only under certain conditions, the most important of which are positively certain diagnosis and technical mastery of the method, which latter is not to be acquired from books, but from instruction by a competent teacher. As to the technique

of the treatment, the author at first strictly followed Brandt's directions, but in course of time he deviated from them in some respects. For various reasons he had to abstain from a systematic employment of the lifting of the uterus. The simultaneous use of the movement cure has a decided advantage, but is not absolutely necessary.

By fixed retrodeviations of the uterus the author understands only such in which the uterus is not only restricted in its mobility, but its body is almost or quite immovable from peritonitic adhesions, flat, band-like, cord-like, or retiform, which fasten it to the rectum or the posterior pelvic wall. Besides fixation of the uterus, there were usually present more or less firm adhesions of the ovaries, which were sometimes completely embedded in thickenings, together with oöphoritis; in some of the cases the tubes were displaced, bent, adherent by peritonitic cicatrices, occasionally with occlusion of the abdominal ostium, with primary or consecutive alterations in the wall of the tube; not rarely there were adhesions of the small intestines to each other and the pelvic organs. Secondly we have to deal with the consequences of inflammatory processes in the pelvic connective tissue—condensation and cicatricial contraction in various parts; on the other hand we have as complications states of relaxation which must be overcome at the same time; and finally chronic metritis, chronic corporal and cervical catarrhs and erosions. This fact alone, that Brandt's manual treatment removes all these pathological conditions (excepting the more important alterations in the adnexa), is a special advantage of the method over others. Altogether the author has treated in this way eighty-two cases of these fixed retrodeviations; fifty of these came from Prof. Chrobak's dispensary clinic, thirty-two from the author's private practice; the former were controlled by Chrobak himself or his assistants, the latter by the different gynecologists who had sent the patients. Seventy of the eighty-two cases were pronounced and bad retroflexions and versions (the fundus uteri in all was situated under the promontory), three were acute-angled antelexions, nine were cases in which the uterus was only slightly curved forward or stretched straight. The cause of the disease was in one-fifth of the cases gonorrheal infection, in two-fifths the puerperium or abortion, the rest were doubtful. The duration of the disease ranged between one and nineteen years, excepting two puerperal cases of four and six weeks' standing respectively. Nearly all patients had been repeatedly and for longer periods under professional care; some had been to various spas without result. In six cases the attempt had been made to detach the uterus under anesthesia by B. S. Schultze's method, and had failed; in two cases ventrofixation by laparotomy had been performed with-

out permanent effect. Several of the author's cases were preceded by appropriate treatment of the uterine catarrh. The symptoms in all cases were severe enough to rob the patients of their capacity for work or the enjoyment of life. As a relatively rare symptom the author mentioned typical intermenstrual pain, recurring almost at a regular hour, which had existed in two cases for seventeen and two years respectively. The results obtained were separated with reference to the objective and the subjective symptoms, and the former were divided into six categories.

Results.—First category. Normal position of the uterus without pessary in eighteen cases; seven retroflexions and versions, three acute-angled and eight blunt-angled ante-flexions or straight position of the uterus.

Second category. Normal position of the uterus with pessary in forty cases; all retroflexions and versions of high degree.

Third category. Perfectly normal mobility of the uterus, which remained in improved position without pessary, five cases, among which one complicated with hydrosalpinx; under careful massage of the uterine ostium the contents were completely evacuated, and two and a half months later there was no trace of a relapse. (Information since received stated that the patient, now in South America, is pregnant.) The complications existing in the cases of this group were mostly cured at the same time.

Fourth category. Mobility of the uterus improved so that it could be drawn to the symphysis, without complete detachment of all adhesions, eight cases.

Fifth category. Mobility of the uterus improved so that the fundus could be raised above the promontory and the uterus brought into the stretched position, five cases.

Sixth category. No result in five cases, two of which were of gonorrheal origin, in which the treatment had to be abandoned after three sittings owing to marked reaction, but without aggravation of the symptoms.

Complete relief of all symptoms caused by the genital affection was obtained in seventeen cases of the first, thirty-four of the second, five of the third, five of the fourth, and five of the fifth category, altogether in sixty-six cases. The permanence of the results could be observed for two years in two, eighteen months in five, one year in four, nine months in eleven, six months in three, five months in five, and four months in three cases. Besides the author received written communications testifying to continued well-being for six months from three cases; the rest were under observation less than four months, and one case was lost sight of. It is noteworthy that permanent relief of all symptoms was secured even without the nor-

mal position of the uterus, while on the other hand some symptoms continued though the uterus was kept in normal position.

The duration of the treatment was, in the patients of the clinical dispensary, on the average eleven weeks, in the private patients seven weeks. This difference is partly accounted for by the external conditions of the patients, which in many precluded a daily visit to the clinic. The symptoms recurred with a relapse of the uterus in three cases after removal of the pessary by others. In two cases the troubles partially recurred despite the normal position of the uterus; in these the treatment had been discontinued by advice of a consulted gynecologist before the existing complications had been overcome. Several cases required treatment of a persisting uterine catarrh. In seven cases, despite the normal position of the uterus, the symptoms were not completely removed; thus, in two cases associated pronounced hysteria persisted, in two cases the typical intermenstrual pains continued, though diminished in intensity. Furthermore, there was only objective and subjective improvement in five cases (interruption of the treatment for other disease in one case, non-return of the patients in two cases). Treated without any result, five cases (two, as stated before, treated only for a few days, three for two months). In view of these results, and considering that a part of the less satisfactory ones cannot be charged to the method, and furthermore that the failures occurred almost exclusively in the first stage of the author's activity, Kumpf believes they may be called very good, without self-praise. Among nearly five hundred cases he had treated altogether, the author has never observed any evil consequences or accidents, nor any instances of sexual excitement. As to counter-indications for manual treatment, gonorrheal infection can *a priori* be considered such only in certain stages, but the prognosis is worse in cases of gonorrheal origin than in those due to the puerperium.

Compared with other modes of treatment, the only rivals are B. Schultze's method and laparotomy followed by ventrofixation. The observation of twenty-four cases in which Schultze's method had been tried shows it to be less valuable and by no means free from danger, nor does it remove the many existing complications. Laparotomy is not devoid of danger; and though the uterus is often brought into ante-flexion, the symptoms, which are of the greatest importance in these cases, often persist, either because complications remain or on account of succeeding peritonitic or parametritic processes.

On due consideration of all the essential points, we may designate Thure Brandt's manual treatment as at present the

most certain and safest method for complete alleviation of fixed retrodeviations of the uterus and the complications and symptoms caused by them; and the author, on the strength of his experience, confirms Dührssen's view, "that laparotomy in fixed retroflexion of the uterus is not justified unless it is preceded by a rational massage treatment."

ABSTRACT.

1. L. LANDAU (Berlin): TUBAL SACS: A CLINICAL STUDY (*Archives für Gynäkologie*, Band xl., Hft. 1, 1891).—In examining a number of tubal sacs, we notice, even on superficial examination, that they differ vastly. In some the mucosa is altered, in others it is the muscularis, again the peritoneal layer, and in some cases all of the layers are affected. The contents of the sacs also differ materially. In some the contents are as clear as water and non-albuminous, in others serous and albuminous, some mixed with blood, others pure blood, some filled with pus which may be thin or thick, cheesy or calcareous. From these various conditions, the sacs have been variously designated hydro-, hemato-, pyo-salpinx. These terms are not altogether satisfactory, for from the contents we are unable to judge of the causation of the disease. In order to do this we must study the mechanism of the formation of the sac, the changes in the tubal walls, and the pathologico-anatomical results.

1. CAUSES OF THE FORMATION OF FLUID. (a) *Retention Cysts*.—The tube is the oviduct of the ovary, and since this is so, is it not possible to conceive that, just as in the case of ducts in other situations, retention cysts may be formed? For this to occur, two conditions are essential, *closure* and *retention*. This does occur in cases in which the ovary is adherent to the tube, when a tubo-ovarian cyst is formed. At times the uterine end of the tube becomes occluded. The amount of fluid from the ovary would not be sufficient to account for the large amount of fluid which is often found in the tube and which accumulates rapidly, so we must look to the tube itself as the source of the secretion. Although it seems to be proven that the tubes do not contain any secreting glands, still the mucous membrane secretes a certain quantity of fluid. Consequently we can have a retention cyst without a marked inflammation of the mucous membrane or admixture of fluid from the ovary, in cases in which both the uterine and abdominal ends are obstructed. A very common cause for the formation of tubal sacs is a tubal pregnancy.

(b) *Catarrh and Inflammation of the Tube*.—Salpingitis

may be caused by streptococci, staphylococci, gonococci, tubercle bacilli, and in rarer cases by actinomyces. It is very difficult to distinguish the form, as usually the infection is a mixed one. The commonest way for infection is by continuity. The pyo- or gonococci enter through the vagina and uterus, and then, according to the amount of irritation, we have a hyperemia, exudation, inflammation, and suppuration: endosalpingitis catarrhalis, purulenta (acute and chronic). If necrosis takes place, then we speak of an endosalpingitis necrotica or diphtheritica. If the inflammation spreads, then the muscular layer of the tube is also affected, and then, when a cure takes place, we often have a stricture or atresia. If the inflammation spreads still further, then we have a perimetritis and a perioöphoritis associated with the salpingitis. These above-described conditions are very frequently caused by gonorrhea. Continuity is also a cause, as seen in cases of puerperal fever. There are many factors of infection through the genital organs. Firstly, acute and chronic gonorrhea, then manipulations, amputations, incisions, intra-uterine medications, cauterizations, curetting, and irrigations.

The inflammation may, on the other hand, be caused by an extension of inflammation from the intestines, as in cases of typhlitis, dysentery, typhoid fever. The peritoneum may be affected first and then the tube, or else, just as in the case of the genital tract, the infection may creep along and only affect the mucous membrane of the tube. This method is best illustrated in cases of actinomycosis of the tube.

We are, therefore, compelled to classify salpingitis, not etiologically, but according to its anatomical characters, as follows:

1. Endosalpingitis catarrhalis (acute and chronic).
 - “ purulenta (acute and chronic).
 - “ hyperplastica (vegetans).
 - “ diphtheritica.
2. Salpingitis, acute and chronic.
 - “ abscondens or dissecans.
3. Perisalpingitis, acute and chronic.

2. THE MECHANISM OF THE CLOSURE OF THE TUBAL SAC.—The inflammation of the tube, as previously described, does not explain the method of the formation of the sac, but besides this there must also be a closure of one or both ends of the tube.

(a) *Mechanical Closure*.—Desquamated epithelium, pus cells, fibrin, or any other contents of the tube may produce a closure of the uterine end. The pressure of the contents on the walls of the tube often produces a twisting of the same, and thus gives rise to a mechanical closure. The closure may also be the result of adhesions which are formed in cases of

pelvic peritonitis. There may also be congenital malformations causing a mechanical closure, the most common variety being a spiral-shaped tube, this being usually bilateral. These congenital malformations prevent the escape of fluid from the tube, thus causing a stasis, exudation, and the formation of a tubal sac. In some cases the contents of the sacs empty themselves, and after a time refill again. This condition L. has termed *intermittent hydro-salpinx*. This is not so very uncommon; in fact, it is the rule in cases of large catarrhal tubal sacs.

(b) *Anatomical and Permanent Closure*.—The permanent closure is seldom congenital, and when it is we must necessarily have the formation of a hemato-salpinx. The acquired closure may be external to or in the tube itself. The first form is due to adhesions, which may encapsulate the tube so firmly as to make it impermeable. A favorite seat for this is the abdominal end of the tube, so that we often have an adhesion of the fimbriated end to the ovary and the formation of tubo-ovarian hydrops or tubo-ovarian abscesses. The second form is due to an inflammation within the tube, the granulations causing a stenosis, and in some cases even complete atresia.

SYMPTOMS. 1. *Hydro-salpinx*.—Owing to pressure of the sac on the various organs, we often observe frequent desire to urinate, constipation, shooting pains toward the back, sacrum, and down the thighs as far as the patella. There is often a weakness of one or both legs, with or without pains in the same, this weakness being due to pressure on the motor nerves. The local symptoms arising from the uterus are hemorrhage, protracted menstruation, and often a continuous, thin, bloody discharge. Very rarely has L. observed severe colicky pains, these being due to contractions of the tube.

2. *Pyo-salpinx*. (a) *Acute*.—L. has often observed this after an abortion or after an intra-uterine manipulation. We have a moderate rise of temperature; the evening temperature (usually there is no chill) rises to 38.5° – 39.0° . There is very severe pain, usually on one side; a hard tumor forms laterally and behind the uterus. This enlarges and becomes the size of a pigeon's egg. The severity of the pain is very characteristic. It is not due to the size of the tumor, but to the amount of irritation. In women who have borne children the pains are described as resembling labor pains. The pains are not localized, but often extend downward. There is frequently nausea and vomiting. Dysmenorrhea is a prominent and marked symptom, and it is termed *dysmenorrhea tubaria*. There is another form of dysmenorrhea which is essentially different from this, and is known as *dysmenorrhea ovarica*. The pains which occur when the tubal sac is forming can be attributed to the contractions of the tubal muscles. This we

term *tubal colic*. These pains do not cease until either the contents escape or until the muscular layer becomes so stretched that it becomes paretic. Pressure over the sensitive spot does not increase the pain, this fact also proving that it is a tubal colic, and not an inflammation of the peritoneum. If there is a peritonitis associated with the disease, then we have the pains which are due to this inflammation, besides the colic already described. These latter pains are darting and stitch-like in character, and are markedly increased even by gentle pressure. It is not at all uncommon to have colicky pains in other portions of the abdomen, as in the hypochondriac regions. These pains usually come on during the night. The acute form of pyo-salpinx may be cured spontaneously, but it usually becomes chronic.

(b) *Chronic*.—This is not always the result of an acute inflammation, but may be chronic from the outset. This is especially the case in purulent gonorrheal endosalpingitis. Sometimes the only symptoms are sterility, slight colicky pains, and a thick, greenish discharge. Usually, however, the symptoms are more marked. Some women complain of severe pain during sexual intercourse; others have hemorrhages or protracted menstruation; others again complain of a distinct localized pain in the sacral region, or there is a crural neuralgia or a coccyodynia. In other cases the inflammation over the tubes causes the most marked symptoms, the others being masked by these. There is a rise of temperature, the patient complains of severe pains in the abdomen, this becoming tympanitic, and nausea and vomiting are associated with this condition. The pain is usually confined to one or the other iliac region. When the affection is on the right side it is often impossible to diagnose the affection from a para- or perityphlitis or an appendicitis. In severe cases, besides the above symptoms we observe constipation, rapid emaciation, almost uncontrollable vomiting, and in many cases symptoms of intestinal stenosis. Where there are numerous adhesions and the sac ruptures, fistulae of different varieties are formed, most frequently into the upper part of the rectum.

DIAGNOSIS.—As pointed out by Kiwisch, an important diagnostic symptom of the existence of tubal sacs is that they are usually bilateral. The general characteristics which guide us are the form, the size, the mobility, and the situation of the tumor. The form, particularly hydro-salpinx, is pear-shaped, or like intestine, the size not larger than a child's head. Hydrops sacs are movable, puss sacs are not. They may lie behind or in front of the uterus. The insertion of the tube into the uterus can be felt.

Hydro-salpinx.—Unless there are unusual conditions present, the tubal sac forms in the cul-de-sac of Douglas, behind

the uterus, and as it grows larger pushes the uterus up and produces an antelexion. If we attempt to push this antelexed uterus backward, *we observe a sensation as if the uterus were pressing against an air or water pillow; and if we then let go, it springs back into its former position.* This L. considers pathognomonic. Other tumors, such as ovarian and parovarian cysts, fibroids, parametritis, echinococci, hematoceles, and pelvic abscesses, may push the uterus forward, but in none of these does it feel as if it lay upon an elastic cushion, as it does in cases of hydro-salpinx. Fluctuation can rarely be felt, and when present L. is inclined to believe that the tumor is not a tubal sac. The tumor is generally immovable, or very slightly movable. Another pathognomonic sign is the possibility at times of pressing out some of the fluid into the uterus.

2. *Pyo-salpinx*.—The affection is usually bilateral; if unilateral, we find a hydro-salpinx on the opposite side. As in hydro-salpinx, its situation is behind the uterus, but it is distinguished by its characteristic form, which is pear, hoof, or sausage-shaped. In order to make out the shape, it is often necessary to make a rectal as well as a vaginal examination.

DIFFERENTIAL DIAGNOSIS.—We diagnose it from tubal pregnancy by the fact that the latter feels like a flaccid cyst, whereas the tubal sac is very hard, firm, and tense. In differentiating from hematoceles, abscesses, and exudations, we must first obtain the previous history of fever and hemorrhage, and then make the manual examination. These formations may push the uterus forward, but we do not get the feeling of elasticity, and they are embedded in and around the uterus, besides being diffuse and without form. It is, however, not always possible to differentiate a tubal sac from a myoma or ovarian cyst by means of palpation; we must use other methods. We cannot always do a laparotomy in order to make a diagnosis, but we can be aided by the use of aspiration. This proves whether the tumor be solid or cystic, and an examination of the fluid drawn off tells us what the contents are.

PROGNOSIS.—This depends upon the contents of the sac and on the number of adhesions. Hydro-salpinx is usually not dangerous to life, especially the intermittent variety. The same is true of those cases of pyo-salpinx in which the pus becomes thickened and cheesy or chalky, or else fluidifies and is then reabsorbed. As a rule, excepting hydro-salpinx and hemato-salpinx, we must consider the prognosis as doubtful.

TREATMENT. 1. *Hydro-salpinx*.—Salpingotomy is contra-indicated in a simple, uncomplicated case of hydro-salpinx. If the uterus is displaced, by rectifying this we are often able to cause an evacuation of the contents of the tube, and thus establish a cure; for the displaced uterus causes a displacement

or a twisting of the tube, thus preventing the escape of fluid. If this is not successful, L. then attempts to cure the case by the use of massage. Massage acts in several ways—by expelling the fluid, in breaking up the adhesions, and in correcting the displacement of the tube and by stimulation causing a contraction thereof. Besides this, it cures the constipation which plays such an important rôle in this disease. L. has never seen any ill effects from massage in cases of hydro-salpinx. He does not employ it in cases of pyo-salpinx. In conjunction with massage, he employs warm (not hot) vaginal douches, sitz and full baths. If there is severe tubal colic, narcotics are prescribed. He is opposed to the cauterization of the tube as a method of cure. Dilatation of the uterus with tents or gauze—a method which has been recommended—he does not consider good treatment. If these above described methods are not successful, we next attempt to cure our patient by puncturing the sac either through the vagina or abdomen. The former method is by far the better, and can usually be employed. It is seldom necessary to use an anesthetic, as it is not very painful. L.'s method is as follows: Thorough disinfection of the vagina, introduction of a small tampon into the cervix, then, with the patient in the dorsal position, he introduces a straight trocar, eighteen centimetres long, through the posterior vaginal wall into the tumor. To avoid injury it is essential to press upon the tumor through the abdominal wall. As long as the fluid is escaping through the trocar, we must not relinquish our pressure on the tumor, otherwise air will be drawn up through the trocar. In many cases this method produces a permanent cure. It may be necessary to repeat this operation several times. If the sac has been punctured several times and then refills again, L. has attempted to perform a cure by injecting a three-per-cent solution of carbolic acid through the trocar. The number of cases treated thus far is not sufficient for him to give an opinion as regards this plan of treatment. He does not recommend the plan of puncturing through the abdominal wall, for he does not consider it altogether devoid of danger, but prefers other methods when the sac cannot be reached per vaginam. When none of these above-described methods are successful, then we treat the case as we do one of pyo-salpinx.

2. *Pyo-salpinx*.—It is not advisable to operate during the acute stage of the disease, unless life be threatened. A certain number of the acute cases are cured without any interference. Should this not occur, however, and if the severe acute symptoms have subsided, then it is proper to give free vent to the retained pus. This does not mean the immediate removal of the tube and perhaps the ovary. Mechanical treatment, massage, and electrolysis are contra-indicated and dan-

gerous. Puncturing the sac in pyo-salpinx is not sufficient to obtain a cure; we must slit up the sac and thoroughly evacuate the contents. We can incise the sac either through the vagina or through the abdomen, or both. Where advisable, L. prefers to incise through the vagina. The vagina is thoroughly disinfected and the tumor incised through the posterior vaginal wall. L. first introduces a canula, and, using this as a guide, makes his incision with a long, straight knife, large enough to admit of the entrance of the index finger. Septa are broken up and masses carefully removed. He then allows the escape of all the retained fluid. The operation is always *unilateral*. The sac is washed out with a warm, weak salt solution or with a solution of permanganate of potash. The cavity is then drained with a T-drain or iodoform gauze. Owing to the fact that the sac has a tendency to close rapidly, it is advisable to retain the drain from eight to fourteen days, and in order to facilitate the discharge of the fluid we should allow our patients to get up the first week after the incision. The results of the incision are often astonishing. A cure is usually established within six weeks. If the sac is not in apposition to the posterior vaginal wall, but is anterior and close to the abdominal wall, then L. recommends an incision through the abdomen. In these cases he only operates unilaterally, just the same as in cases of echinococci, hydronephrosis, and extra-uterine sacs. If the sac is large, he prefers to make his incision along the linea alba, otherwise he cuts parallel to Poupart's ligament. He formerly drained through the vagina, but found this unnecessary, so that now he drains only through the abdominal wound. In some cases where there are numerous adhesions, he finds it necessary, after making his abdominal incision, to press the sac down and then incise through the posterior vaginal wall as well. In some cases all of these above-described methods are unsuccessful, and then the tube must be excised.

3. *Hemato-salpinx*.—If no symptoms arise, it is unnecessary to adopt any plan of treatment. If the blood changes into pus, then we incise the sac. If a recent hemato-salpinx occurs with pressure symptoms, then the author prefers to do a laparotomy.

LEONARD S. RAU.

ITEMS.

DR. HOWARD A. KELLY has been appointed Professor of Obstetrics and Gynecology at the Johns Hopkins University, and has been elected a Corresponding Fellow of the Obstetrical and Gynecological Society of Paris.

PHYSICIANS are cordially invited to be present at the meeting of the Southern Surgical and Gynecological Association to be held in Richmond, Va., November 10th, 11th, and 12th, 1891. The following is a partial list of the papers to be read:

The President's Annual Address, Louis S. McMurtry, M.D., St. Louis, Mo.; Remarks on Systemic Infection from Gonorrhea, illustrated by Cases, Bedford Brown, M.D., Alexandria, Va.; The Rational Treatment of Peritonitis based upon the Consideration of the Pathological Conditions Present, W. D. Haggard, M.D., Nashville, Tenn.; A Medico-Legal Aspect to Pelvic Inflammation, W. W. Potter, M.D., Buffalo, N. Y.; Complications in Pelvic Surgery, and How to Deal with Them, Joseph Price, M.D., Philadelphia, Pa.; Cholecystotomy, Report of Case, Fifty-two Gall Stones and Ten Ounces of Pus Removed, Success, W. B. Rogers, M.D., Memphis, Tenn.; Some of the Complications of Psoas Abscess, J. McFadden Gaston, M.D., Atlanta, Ga.; Laparatomies Performed in the Past Year, Thomas Opie, M.D., Baltimore, Md.; Imperforation of the Rectum, Geo. Ben. Johnston, M.D., Richmond, Va.; A Case of Induced Abortion for the Relief of the Nausea and Vomiting of Pregnancy, with Remarks, Christopher Tompkins, M.D., Richmond, Va.; Growth of Fibroid Tumors of the Uterus after the Menopause, Jos. Taber Johnson, M.D., Washington, D. C.; The Part the Shoulders Play in the Production of Laceration of the Perineum, with Suggestions for its Prevention, W. D. Haggard, M.D., Nashville, Tenn.; The Pedicle in Hysterectomy, How Formed, its Subsequent Behavior, its Final Condition, I. S. Stone, M.D., Washington, D. C.; A Case of Pelvic Abscess, John Brownrigg, M.D., Columbus, Miss.; A Case of Cyst of the Mesentery with Remarks, J. A. Goggans, M.D., Alexander City, Ala.; The Female Urethra, K. P. Moore, M.D., Macon, Ga.; Medico-Legal Aspect of Intestinal Surgery, J. D. S. Davis, M.D., Birmingham, Ala.; Albuminuria, its Relation to Surgical Operations, J. W. Long, M.D., Randleman, N. C.; Hemorrhage *versus* Shock, W. L. Robinson, M.D., Danville, Va.; Treatment of Gall Stones, with Report of Cases, W. E. B. Davis, M.D., Birmingham, Ala. Also papers by Hunter McGuire, M.D., Duncan Eve, M.D., A. V. L. Brokaw, M.D., Chas. A. L. Reed, M.D., W. F. Westmoreland, M.D., and others.

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ORIGINAL COMMUNICATIONS.

COMPLICATIONS IN PELVIC AND ABDOMINAL SURGERY,
AND HOW TO DEAL WITH THEM.¹

BY
JOSEPH PRICE, M.D.,
Philadelphia.

My reason, briefly stated, for choosing this subject as the matter of my paper before this Society, is that the importance of recognizing the part that complications play in the work of the surgeon is not appreciated by the generality of medical men, by general surgeons, and by those who are anxious to begin their surgical investigations and trial trips by an entrance into the domain of abdominal or pelvic surgery. First of all it is to be considered that the complications in this special branch of surgery are primarily those of surgery in general, with many things superadded to render them more formidable. By this I mean that shock, the dangers of anesthetization, hemorrhages, etc., are all to be found here as they are in all surgical experience. But the increment which renders even these more formidable than they are in the surgery of the external parts,

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lies in the fact that the organs dealt with, or in relation with those with which it is intended to deal, are the really vital members of the economy. Hence the dangers from shock are intensified. The blood vessels, too, are to be managed out of sight, often at the ends of the fingers only, and a special tactile sense is really necessary to insure thorough mastery of this peculiar difficulty. The general surgeon has, in almost all his work, the operation before him, and this is the end to which he directs his efforts. The abdominal surgeon has a general end in view, but besides this he must never forget that the accidental operation that he may perchance find necessary in order to accomplish his original design may in its importance overshadow and surpass all that it was originally intended to do.

It may be the intention of the surgeon to remove the appendages for a bleeding fibroid. Now, in ordinary operations the removal of the uterine appendages is to the skilled abdominal or pelvic surgeon one of the simplest of undertakings. If, however, under the conditions named above, he attempts to accomplish the removal without holding in mind the complications that as a rule exist, he may find, too late in many cases, that he has attempted an operation that he cannot finish, or, if he does complete, he has also sacrificed his patient or rendered her worse off than before. In other words, to accomplish a cure he may have to abandon removal of the appendages and perform hysterectomy, which has but little in common with the operation originally proposed. Now, if this idea is still further carried out, we shall find that complications do not confine themselves to one system of organs, but extend to all surrounding structures by reason of inflammatory adhesions. This is true of bladder, ureters, intestine, omentum, stomach, and liver. Adhesions are the bane of abdominal and pelvic surgery. They are worse in pelvic than in abdominal surgery, and hence we see that the greatest mistakes and failures are made by those who, from a knowledge of abdominal surgery simply, have attempted to deal with pelvic inflammations. The abdominal surgeons who can be counted as really successful pelvic surgeons are therefore few. This is said with no intention of detracting from the importance of abdominal surgery. The strictly abdominal organs must always

enter largely into the domain of surgery. What I mean to maintain is that, generally speaking, the complications met in treating the surgical affections of these organs are far less, and accordingly the difficulty of dealing with them is not so great.

I have briefly outlined the argument by which I wish to call attention to the importance of the term complication, and the reasons for which it enters more into the work of this special branch of surgery than into the surgery of the external parts. Now let us consider complications in detail and how we shall deal with them. In the first place, take adhesions. These, in all pelvic disease, are apt to fuse the adjacent structures until they seem to be one conglomerate mass, and their integrity is threatened with destruction by the efforts to separate them. Here, if we follow the rule of the general surgeon or the post-mortem investigator, calamity will be our only result. We cannot use either knife or scissors to aid us. The dexterous use of the finger tips aided by the supporting nail is our only resource. We must not expect to force our way with violence. Our only hope is to investigate carefully, to find a plane of cleavage such as the mineralogist finds and utilizes in his scientific investigations. These exist no less truly in inflammatory adhesions, and it is along such lines that the path of separation must be sought. As they cannot be seen, they can only be felt; and it is here that his delicate tactile sense comes to the aid of the experienced surgeon and enables him to distinguish between lines of cleavage and advances into the structure of the organs which it is necessary to preserve. Once having separated adhesions, it becomes necessary to deal with the hemorrhage that often accompanies their breaking up. Hemorrhage here is what hemorrhage is nowhere else. Ligatures will not control it, styptics cannot be used, and pressure cannot be applied indefinitely in the usual way. How, then, shall we control it? First, we must resort to hot water—hot as the surroundings will tolerate without being cooked or losing their vitality. I have in mind a recent patient that I almost lost by neglecting to flush the pelvis after a trying operation. We must get out of our heads the idea that irrigation is dangerous. Very often in my experience has hot water brought about a speedy reaction in patients

whose lives were almost despaired of. We are told that irrigation or flushing is dangerous. If the conditions are desperate, and if the cases do badly, they do so, not on account of the flushing, but because of the operation that preceded it. Next we have a resort in packing. Gauze packing accurately applied to the bleeding or oozing surfaces, so that it can be removed without interfering with the otherwise completed operation, is of infinite value in hemorrhage. If absolutely clean and fresh, either salicylated or iodoformized, it can be suffered to remain almost indefinitely, broadly speaking, at least up to sixty or seventy-two hours.

Next we must remember that the drainage tube controls hemorrhage. The tube is currently spoken of as if it were an annex to pelvic surgery, easily dispensed with. I use it almost without exception where there have been adhesions. My results are better than those obtained without its use. It is the testimony of the nurses that cases with drainage have more uneventful recoveries than those without it. And there is a reason for all this. Drying the pelvis by constant removal of fluids gives the leaking vessels a chance to recover themselves and become sealed. Moisture thwarts this. Now, how shall I take care of the tube? How shall I place it, how shall I dress it? All this belongs to the question as to whether it shall be used. Nothing will clean a tube so well as frequent drainage by the long-nozzled syringe. Capillary drainage will not do it, because capillary wick will not take up débris that gravitates to the bottom of the pelvis, having escaped the irrigation, as it sometimes may do. Again, lymph hardening in the capillary meshes destroys its absorbent power and thwarts the end for which it is used. Further, if there is the least irritating quality in the fluid draining, it is retained in the tube by means of the wick and becomes more irritating. Lastly, the introduction of wick into a tube, as small as should be used and changed as often as is consistent with good and efficient drainage, is a matter not nearly so readily accomplished as aspiration by the syringe. This is so plain as to admit of no controversy. Drain the tube often enough to keep it dry; dress it so as to keep the patient dry and clean; remove it as soon as the discharge is clear—these are the postulates of its successful application.

Intestinal adhesions—how are we to deal with them? It is evident that the integrity of the bowel is to be maintained. Hence, if it is injured, it is to be stitched up by the finest possible silk, in the neatest possible way, and so as not to interfere with its function. No holes are to be left in the omentum, and stringy masses thereof are to be carefully tied off. We should pay especial attention to bringing the omentum down into as near a physiological position as possible. Leaving it to itself where it may contract adhesions at will wherever it pleases, is a sure way to have after-complications to deal with. If it is to adhere to anything it should be put where it will be likely to cause least trouble.

Re-operation on old cases is a most discouraging condition to contemplate. One never knows what is going to be found. There is often very little to be hoped for, and, however great the care, the results are often bad. One great cause for re-operation has now been banished—I mean the use of strong antiseptics, in solution, spray, and otherwise. They formerly were at the bottom of a great deal of post-operative inflammation. The direct method of dealing with all pelvic inflammation is urgently to be advised. Prompt enucleation cannot fail to be more satisfactory than any other means. Puncture per vaginam is easily disposed of as unsatisfactory and often dangerous. When enucleation is practised we have under our eye or touch the essential relation of the parts and their environments, and we also know to what extent the mischief is confined to one set of organs, and whether it has complicated this or that structure. Not so when any of the so-called conservative methods are used. Here we grope in the dark. We wait until this or that set of symptoms is developed, and vainly strive to justify the methods of delay by imaginary refinement of diagnosis, which cannot be made outside of the pelvis, to say nothing of its impossibility inside it.

The plea of my paper is for exact, painstaking work that shall leave nothing for regret, nothing to do over, nothing to explain; that, when put beside methods that palliate without curing and are no more a part of real surgery than hypnotism is refreshing sleep, shall stand in the light of results as justifiable, scientific, and perfect.

HAND DISINFECTION.¹

BY

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"SEPSIS" is a technical term designating an intoxication proceeding from certain forms of necrobiosis, or destruction of the minuter elements of the tissues.

The recognition of the direct dependence of such destructive changes upon the action of micro-organisms is now the very alphabet of the bacteriological laboratory and the keystone of the most important recent advances in pathology. The occurrence of sepsis in the human body is also acknowledged by every surgeon who employs the terms "antiseptis" and "asepsis," and I know of no educated medical man to-day who does not include them in his vocabulary.

Suppuration is but one of the phenomena (conservative) attending the efforts of certain definite forms of germs to invade the tissues.

The common germs of suppurative wounds are the *staphylococcus pyogenes aureus*, the *staphylococcus pyogenes albus*, and the *streptococcus pyogenes*.

Prevent the invasion of these germs and you prevent the necessity for suppuration. The magnitude of that statement I need not discuss in the presence of a body of eminent practical surgeons.

Disinfection is any means put in action for removal or destruction of these pathogenic germs.

Disinfection of *instruments* and *dressings* by means of steam, and that by Arnold's steam-sterilizer, as tested and introduced by the Johns Hopkins Hospital, absolutely frees our armamentarium from this living danger.

But two important avenues of infection remain—the *hands*

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of the surgeon, which will contaminate the wound, and the patient's own body (auto-inoculation or auto-infection).

My recent investigations have led me to important conclusions relative to both of these sources of infection. To-day I shall speak only of the former.

I will present my thesis in a series of postulates, which will be defended by a parallel series of crucial experiments¹ which consist in cultures taken from the hands both before and after using the various disinfecting agents.

The method of taking these cultures is as follows :

The steel blade of a scalpel is brought to a white heat and then allowed to cool. With this a visible amount of the epidermis is scraped from the palmar surface of the hand, or some of the tissue is removed from under the nail.

The platinum wire, mounted in a glass handle and used for inoculating the tubes, is heated white hot, allowed to cool, and by its means the material on the knife blade is transferred to the culture medium. The culture tube, containing sterilized gelatin or agar-agar, is held obliquely as the cotton plug is carefully withdrawn and the gelatin or agar stabbed with the inoculated platinum needle, when the plug is at once replaced. To discern the separate colonies the better, the agar is liquefied by heat and cooled by rolling it nearly horizontally on a block of ice. In this way the germs are widely distributed over a thin layer, and "roll cultures" are obtained after the tubes have remained several days in the thermostat.

I. *The Presence of Germs on the Hands.*—The *staphylococcus pyogenes albus*, and sometimes the *aureus*, are present in enormous numbers on the hands and about the nails of every individual associated with medical work in this community. This is demonstrated by all the experiments I have conducted.

II. *The Inadequacy of Soap and Water to remove all Germs.*—The ordinary practice of washing the hands thoroughly for from five to twenty-five minutes, with soap and water and a scrubbing brush, is utterly inadequate to remove all the germs.

¹I acknowledge with pleasure my indebtedness to my co-workers, Drs. Hunter Robb and Albert A. Ghiskey, gynecological resident and gynecological assistant in the Johns Hopkins Hospital.

The undoubted value of such a procedure lies in the fact that it constitutes the best form of mechanical disinfection, removing all easily detachable epithelial and subungual débris loaded with germs, thus reducing the chances of conveying infection to those more firmly seated.

Sixty-five experiments were made with doctors who scrubbed their hands *ad libitum* (ten to twenty-five minutes) with strong brown soap and hot water frequently changed.

Eleven of these were outside of the gynecological staff, and some who came from a distance felt quite sure of their ability to secure aseptic hands with soap and water alone. *In every instance* of the eleven, *myriads of coccal¹ colonies* developed.

In the remaining *fifty-four* cultures, taken from my gynecological assistants and myself, all but nine yielded numerous colonies. These nine are mentioned for accuracy's sake; they are to be explained by the inhibiting power of bichloride of mercury used as far back as the day previous, as will be shown further on.

In seven additional experiments with nurses scrubbing their hands with soap and water, temperature 40° C. (104°F.), for ten minutes, the results are all positive, developing from forty to six hundred, and inestimable, colonies of *staphylococcus albus* and a few of *aureus*.

In each instance it was known that the test was about to be made, and all endeavored, by unusually vigorous efforts, to earn the credit of "no growth."

III. *Bichloride of Mercury² Solutions as strong as 1 : 500 are not germicidal* after immersion of the hands for from two to five minutes. The mercuric salt acts either by mechanically coating or chemically combining with some portion of the coccus, thus *only inhibiting further growth* until the salt is precipitated or removed.

This I have repeatedly shown to be true following both the ordinary practice of immersion of the hands from two to five minutes in 1 : 500 and 1 : 1,000 solutions, after a preliminary washing for ten minutes with soap and water, and again after carefully following out Fürbringer's method, now so generally adopted.

¹ In almost all instances the *staphylococcus pyogenes albus*.

² Merck's recrystallized.

The latter method was distinctly shown to be inefficient in almost every instance. It is briefly the following:

Clean the nails with a pointed steel.

Scrub the hands, especially the nails, one minute with soap and hot water and a sterilized brush.

Immerse the hands in alcohol (not under eighty per cent) for one minute; immediately transfer hands, still wet with the alcohol, to a freshly-prepared solution of mercuric bichloride, 1:500, for one minute, when they are supposed to be sterile.

I exhibit in my hand four tubes carrying cultures which failed to develop after sterilizing by this method, illuvisely showing an apparent sterility, for here, on the other hand, are the cultures taken from the same fingers *after precipitating the bichloride with a sterile ammonium sulphide solution, and these show innumerable colonies.*

These particular experiments were made in the ordinary manner last Saturday, and are, I assure you, in no way selected for a demonstration. It is a remarkable fact, of great practical importance, that this inhibiting effect of the bichloride holds over on the hands for twenty-four hours. In two instances of men who had been away from the hospital for from four to six weeks, the ammonium sulphide produced the characteristic dark stain on the fingers showing the presence of bichloride. Here is the source of error explaining the nine negative results in the hands of my staff after simple soap-and-water cleansing. We did not then know of this property of the sublimate.

Four experiments were also made with a four-per-cent solution of lysol; all yielded colonies.

Three experiments with peroxide of hydrogen also furnished abundant colonies.

IV. *Solutions of Potassium Permanganate and Oxalic Acid the best Germicides.*—My experiments have demonstrated that the permanganate of potash, applied to the hands in saturated solution, and then decolorized by a saturated solution of oxalic acid, is the most efficient germicide in our possession.

I have followed this practice in all my abdominal operations for over two years, and I here present the scientific

grounds for rehabilitating this old and well-known disinfectant in this particular field. My method of disinfection is:

1. Scrubbing the hands, with especial attention to the nails—not more than one millimetre in length—for ten minutes in water frequently changed, at about 40° C. (104° F.).

2. Immersion of the hands in a solution of permanganate of potash, made by adding an excess of the salt to boiling distilled water,¹ until every part of the hands and lower forearms is stained a deep mahogany red or almost black color. They are then transferred at once to a saturated solution of oxalic acid until completely decolorized and of a healthy pink color. This decolorization is accompanied by a sense of warmth, due to chemical reaction, and a sharp stinging wherever there is any abrasion of the epidermis.

3. Washing off the oxalic acid in warm sterilized water.

By this simple process the hands are rendered more nearly absolutely aseptic than by any other known means.

In fifty experiments after disinfection by this method, forty-four remained without growth; the remaining six yielded respectively eighty, twenty, ten, nine, five, four colonies—an enormous quantitative difference in favor of permanganate of potash and oxalic acid, as contrasted with soap-and-water and corrosive sublimate.

In conclusion, let me briefly recapitulate the gist of this most important matter.

- I. Staphylococci (mostly albus) were present on the hands of all persons examined.

- II. It is impossible to get rid of these staphylococci by scrubbing the hands and nails from ten to twenty-five minutes with a sterilized brush, soap, and water, temperature 40° C. (104° F.).

- (a) Demonstrated by countless colonies developed in one hundred per cent of cases examined—nurses and doctors whose hands were infrequently or not at all immersed in bichloride solutions.

- III. The bichloride of mercury solutions as used, up to 1:500, are not germicidal, as supposed.

¹ Cold water takes up from four to five per cent, boiling water twenty-five per cent.; the excess is redeposited on cooling.

(a) Previous erroneous conclusions as to the efficiency of the bichloride shown to be due to an inhibiting action which may persist at least twenty-four hours after the last use of the drug.

(b) Precipitation of the bichloride on the fingers with a sterile ammonium hydrosulphuret solution yields numerous colonies, after complete failure to develop before precipitating.

(c) This statement holds good also of Fürbringer's method, which failed to show germicidal properties.

(d) Hydrogen peroxide and lysol (four per cent) were tested and found wanting.

IV. The germicidal properties of a saturated solution of potassium permanganate, followed by its neutralization in a saturated solution of oxalic acid, supported by

(a) Large number of experiments in which no colonies at all developed, immediately after the demonstration of countless colonies after soap and water.

(b) In the low percentage of cases in which germs developed the number of colonies was small and definite.

In the present state of our bacteriological knowledge as to the causes of inflammation and suppuration, we are bound to use every means in our power to avoid sowing any unnecessary germs in our wounds. Soap and water are, I believe, the best disinfectants, if we use but one, for they remove all germs which will come away easily. The bichloride of mercury, although dangerous on wounds on account of its property of coagulating and causing necrosis of albuminous tissues, has the valuable property of inhibiting those germs with which it comes into contact. Permanganate of potash and oxalic acid are harmless to the hands and are germicidal. Soap and water plus the permanganate of potash and oxalic acid are the only true germicides and therefore the best disinfectants we possess to-day.

THE GROWTH OF FIBROID TUMORS OF THE UTERUS AFTER
THE MENOPAUSÉ.¹

BY

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THE teaching of the text books, that uterine fibromata cease to grow, as a rule, or to give rise to symptoms after the menopause, which is so popular in the profession as well as out of it, I believe to be quite erroneous.

The object of this paper is to put on record cases and opinions in opposition to this teaching, and to thus aid in recasting our views and in modifying our practice.

I have, within the past five years, seen at least a dozen women with large growing and troublesome fibroid tumors of the uterus, who were over 50 years of age, some of them over 60. These women had been assured by their physician that, if they could get along somehow until after the change of life, their tumors would not only stop growing, but that they would lessen in size and probably go away altogether—at least the troublesome and dangerous symptoms would certainly disappear.

They had been advised against any radical operation, and encouraged to believe that as they grew older they would get entirely well.

In perhaps the majority of cases this might prove to be very good advice; but the point which I wish to make is that, as we are now better acquainted with the history and behavior of these tumors, this is no longer safe advice to give. We cannot assure any woman that her tumor may prove to be one of the exceptional cases, and that it may not grow more rapidly even after the menopause than it did before, or that it may not present complications equally distressing or disastrous. When from forty to fifty per cent of

¹ Read at the fourth annual meeting of the Southern Surgical and Gynecological Association, at Richmond, November 11th, 1891.

women subjected to supravaginal hysterectomy died from the effects of the operation, this was very safe and conservative counsel to follow. The possible dangers of the tumor were not equal to the probable dangers of the operation.

But since we know more of the complications and possibilities of these tumors late in life, and of the improved technique of operations for their removal, I wish to raise the question as to whether this is any longer the safest advice for a woman with a growing fibroid, and nearing the average age of the menopause, to follow.

At least I hope to so modify prevailing views as to no longer permit any positive assurances that the menopause will bring relief and cause the tumor to shrink up and go away.

That others have noticed exceptions to the "rule" as stated in the books, the following brief extracts from recent writers will testify; though I do not intend to burden this short paper or tax your patience with quotations from numerous authorities equally within the reach of all the Fellows of this Society.

In the "Cyclopedia of Obstetrics and Gynecology," vol. vii., page 49, Hegar and Kaltenbach say: "The menopause does not, by any means, check the growth of tumors in all cases. The tumors sometimes attain a colossal size very rapidly at this period, because they undergo fibro-cystic or other degeneration, or are nourished by newly developed vascular adhesions. But the symptoms are by no means directly proportionate to the size of the tumors. Even small and medium-sized tumors may become so annoying on account of the pains, peritonitic irritation, impaired motion, and inability to work, that their removal becomes a vital question to the patients."

Börner, in his work on the "Menopause," vol. xi., same work, says: "The most important fact of all is the circumstance to which attention has already been called in former pages, to wit, increase in size of fibromata during and after the climacteric.

"As Lawson Tait, for example, observed: 'The growth of the fibrous tumor does not cease in every case with the cessation of the menses,' and he operated upon four women who had passed the menopause and suffered with rapidly growing

myomata ; and Schorler has reported four histories which show the exceptional growth of fibro-myomata after the menopause. I have myself on some occasions been able to demonstrate such a condition. A lady, aged 56, who was childless, ceased to menstruate at 45, and came to me fifteen months ago on account of an abdominal tumor which she herself had noticed two years before. The tumor at that time extended upward to within two finger-breadths of the umbilicus. . . . A little more than nine months later the tumor extended a finger-breadth above the navel, its other dimensions remaining much the same as before. . . . Three months later it showed a marked enlargement in all directions. Now the lady, by reason of the further increase in all her symptoms, has for some time entertained the idea of risking a radical operation. I have seen two or three other women with large interstitial tumors which continued to grow in spite of the establishment of the menopause."

Skene, in "Diseases of Women," page 351, says: "The rule is that fibroids are never seen before puberty, and they usually disappear after the menopause, but not always immediately after the cessation of the menstrual function. Usually the menopause is postponed in cases of fibroma, the patient continuing to menstruate until 50 years or over. Neither does the decrease in the tumor begin as soon as the menses stop in all cases. On the contrary, the organic forces which maintained the menstrual function, being no longer called for, are devoted to the growth of the fibroma, and this growth may go on for some time after the menopause, but the rule is that in time the process of atrophy begins and the tumor diminishes and finally disappears, or nearly so."

The last edition of Thomas, however, just thoroughly revised by Mundé, says, on page 523: "Then undergoing a certain degree of atrophy with the cessation of the uterine and ovarian functions, they cease to be to any degree a source of annoyance, or at least of danger."

Dr. Busey, of Washington, has observed three cases.

My attention was attracted to this subject two years ago by reading a discussion in the Cincinnati Obstetrical Society, in which a number of speakers referred to cases which were then thought to be notable exceptions to the general rule. Several

speakers referred to large and dangerous tumors which they had recently seen in women who had passed the climacteric, and one gentleman referred to a distinguished surgeon abroad who had reported twelve cases where uterine fibromata had grown into very large and troublesome tumors, requiring removal some time after the total cessation of the monthly periods.

Scattered here and there in journal literature I have since seen cases reported of fibroid tumors continuing to grow after the menopause; and in conversing with many medical men upon this subject, I have scarcely met with a physician of experience who has not known of one or more instances within the limits of his own practice.

I have notes of the following cases:

CASE I.—Mrs. B., colored, age unknown but evidently over 60, entered my service in the Providence Hospital in December, 1888. She had not menstruated for twenty years. She had been a cook in the family of Dr. Yarrow, a near neighbor of mine, until the tumor, by its size and weight, incapacitated her for further service. Contrary to our usual experience in these cases, her change of life had come on very much sooner than usual, I think at about 30, after some very severe hemorrhages. When she came under my care her tumor was estimated by a number of physicians to weigh at least forty pounds.

Acting upon the advice of Dr. Waite, of the firm of Waite & Bartlett, makers of electrical instruments, from whom I had just purchased a powerful battery, I punctured this immense tumor through the abdominal wall in the presence of a number of medical gentlemen, and gradually turned on a current of two hundred milliampères. The patient had an uncomfortable time for about a week, but after that she felt better.

I never had the courage to repeat the dose, and the patient left the hospital on account of her fear of a second puncture. I saw her a year ago, but she was no better. She thought she was getting larger, and I agreed with her in this opinion.

CASE II.—In August, 1891, a colored woman, giving her age as 61, entered my service in Columbia Hospital with a very large uterine fibroid. She looked as if she were 81

instead of 61. She was quite gray and very decrepit and feeble. She said she had carried the tumor for upward of thirty years. I think she was right about this, as she said that she was troubled with it "previously befo' de wah."

She said she had not menstruated for more than twenty years, and that the tumor had doubled in size within the last five, very much to her astonishment, as she had been told it would go away after the change of life. She went on from bad to worse, and died in a few weeks after her admission. We simply tried to make her as comfortable as possible. Her feet and legs were enormously swollen, and the abdomen contained about a gallon of fluid, causing much cardiac and respiratory trouble. The upper part of the tumor was found at the post-mortem to have undergone calcareous degeneration. Indeed, a portion of it weighing about twenty pounds was as hard as bone; knives or chisels made no impression upon it. We, however, sawed out a section of the tumor.

Another lobe of it had undergone cystic degeneration, which, upon section, discharged a quart or more of foul-smelling fluid. The ureters were enlarged to the size of the little finger, and both contained pus. The kidneys were both enlarged, softened, and dilated, and their pelves contained pus. The peritoneum was greatly thickened.

These are the dangers which threaten patients with large fibroids late in life.

The peritoneum and the abdominal viscera will tolerate a surprising amount of pressure and mechanical interference; but we cannot calculate with any degree of certainty at what point of endurance this toleration will cease. In pregnancy, when it is unfortunately associated with albuminuria, the belief exists in the professional mind that the kidneys have been interfered with in some unusual way by pressure to cause the symptoms to culminate in eclampsia. Something else must combine, in the exceptional cases, with the pressure or the mechanical interference of the uterine tumor to cause the albuminuria, uremic convulsions, coma, and death. What that something is has not yet been accurately determined. It has been ascertained, however, by Fancourt Barnes and others, that albuminuria exists in about the same proportion of cases of fibroid tumors as in

pregnant women; and I believe that many a woman has been reported to the health office as having died of kidney disease, or intestinal obstruction, or cystitis, or hemorrhage, or diarrhea, or exhaustion, or anemia, or peritonitis, when the exciting and real cause of her death was a fibroid tumor of the uterus. The complicating disturbances are more fatal in women past 50 years of age, as their powers of resistance are less, and the abdominal viscera cannot reasonably be expected to so safely tolerate these interferences and long-continued and increasing pressure after the child-bearing period has passed.

The danger of these tumors undergoing calcareous and cystic degeneration increases after the menopause, although, as I said in the beginning, most authors teach that these cases are more exceptional than our later experience justifies us in believing is actually the case. Most of the cases within my own experience have become cystic, and it is quite possible that what has appeared to be a growth of the tumor has been in reality a cystic degeneration. Though the tumor has greatly increased in size and produced symptoms of a most distressing character, this may have been no true growth of the tumor. This subject was recently discussed in the medical society of my own city, and the belief was expressed by Prof. Kleinschmidt and others that this was the case. New vascular connections with the omentum and other tissues explain the growth in some cases after the usual atrophy occurs in the uterus and the appendages. The blood supply and nourishment of fibromata are thus kept up, and they continue to grow notwithstanding the senile atrophy of the uterus and ovaries. This probably explains the few cases reported of an increase in size of the tumor after removal of the appendages for the relief of bleeding caused by myomata.

CASE III.—The second case I operated upon in Columbia Hospital was a colored woman, age 59, who had carried a large fibroid for twenty years. Her condition was a pitiable one, and she was very desirous for the removal of the tumor. I explained to her all the risks and dangers of supravaginal hysterectomy, but she insisted on the operation. I still hesitated, and sent her away to the country for three months, at the expiration of which time she returned and demanded that

I should keep my promise. She was twelve years past her menopause.

I encountered many adhesions at the operation, and she lost some blood. The incision was very long, and one lobe of the tumor extended up by the side of the liver.

In lifting this lobe out of the wound my fingers penetrated its softened posterior wall, and at least two quarts of most offensive-smelling fluid gushed out into the abdominal cavity. The operation of supravaginal hysterectomy was finished in the usual way. The abdominal cavity was washed out and a drain tube left in. The patient did not rally well. She vomited much at first from the effects of the ether, and suffered considerably from pain. A hypodermic injection of morphia was given in my absence, and the vomiting returned and continued until her death on the fifth day. How much influence the morphia had in aiding the result I, of course, do not know. Its use is opposed to recent views and to my own practice. It certainly provoked nausea and prevented the stomach from retaining food, which was, however, given by the rectum.

No post-mortem was permitted, but her death was put down to exhaustion, as there were no evidences of peritonitis, though there was plenty of cause for her having it from both traumatism and sepsis.

CASE IV., also at Columbia Hospital, was a colored woman, apparently over 50, who still had an occasional menstrual period, and also an immense fibroid tumor which had undergone cystic degeneration. When the recent Medical Congress was in session I invited a number of distinguished gynecologists to see her, and, while they all urged an operation, they all differed in their diagnosis.

At the operation I removed a forty-four-pound fibro-cystic tumor of the uterus, and in this case the patient seemed to die either from shock or the anesthetic; at least she never rallied, and died in about an hour after being put to bed. She lost less than a pint of blood, and no hemorrhage occurred after the operation.

Sir Spencer Wells reports in his book on "Uterine and Ovarian Tumors" twelve operations on fibroid and fibro-cystic tumors of the uterus in women over 50 years of age and

presumably past the menopause—though he does not state this fact—with six recoveries and six deaths. In his table of one thousand ovariectomies it is clearly shown that the mortality is greater after 50 than before. I presume this is true of most severe surgical operations. It is fair to presume that if these women had been operated on earlier their chances for a successful issue would have been much improved. I think the following conclusions may be fairly drawn from the foregoing remarks:

1. That the “rule” stated in the text books, that uterine fibromata cease to grow after the menopause, has many more exceptions than is generally supposed.

2. That *when* they continue to grow after the menopause, they pursue a more disastrous course than before.

3. They more frequently become cystic, calcareous, or have abscesses develop in them.

4. These conditions requiring operation according to well-known rules of surgery, the patients are in a less favorable condition for recovery than before the menopause.

5. If the above conclusions are admitted to be true, it must follow that they furnish additional indications for more frequent and earlier resort to the radical operation.

In the hands of the best operators, in cases where a pedicle can be secured, the mortality of supravaginal hysterectomy is rapidly approaching that of ovariectomy.

A MEDICO-LEGAL ASPECT TO PELVIC INFLAMMATION.¹

BY

WILLIAM WARREN POTTER, M.D.,
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PELVIC inflammations in women have been described, discussed, and debated from almost every point of view imaginable, until our periodical medical literature is flooded with

¹ Read at the fourth annual meeting of the Southern Surgical and Gynecological Association, at Richmond, November 10th, 1891.

articles on the subject, and medical society transactions are teeming and bristling with papers pertaining thereto. This is well, for there are yet many unsettled questions relating to this important subject. So far, however, I have not observed that any one has undertaken to discuss these intrapelvic conditions from a medico-legal standpoint. It is my purpose in this paper to present that aspect of the question, taking for my text a case that developed an interesting problem in that respect.

History.—The following is an epitomized history of a case which will illustrate the chief points that I wish to consider on this occasion :

A married woman, 22 years old and in the sixth month of pregnancy, fell into a shallow trench or excavation that was left open during the laying of a new street pavement. She was immediately helped out by her husband and walked home, a distance of several blocks. She made little or no complaint of the accident for a fortnight, when she began to complain of pain over the lower abdomen, and called in a physician, who pronounced her suffering with diffuse or general peritonitis. This attack subsided in due time, only to be followed by another, and still another within the next few weeks.

About three and a half months after the alleged fall she was delivered by forceps, apparently at term, of a still-born child. The fetus was described as emaciated but not putrescent, and it was ascertained that motion had been felt by the mother a few hours before delivery. After a reasonably prompt puerperal convalescence, the woman began to complain of pain in the right hip joint, which was so persistent that a physician, not her attendant during delivery, was called. This physician was in attendance for a short time, but, as relief was not obtained under his ministrations, she recalled her first medical adviser and re-established him in charge of her case. The pain meanwhile continued, and her physical condition was such as to excite considerable apprehension, so her physician called as counsel a surgeon. He diagnosticated it to be a case of hip-joint disease, and the extremity was placed in an extension splint such as is ordinarily used by surgeons in coxitis. This dressing was kept upon

the extremity for a period of two months or more, at the end of which time she was pronounced sufficiently cured to dispense with the extension apparatus.

In the meantime a suit for damages had been entered against the city, with the paving contractors as co-defendants. Before it came to trial I was invited by the counsel for the defendants to examine the patient in association with an accomplished specialist, Dr. M. D. Mann, of Buffalo, with a view to determine her present condition, and, if possible, the cause of her ill health. We found an inflammatory mass in the pelvis on the right side of the uterus. It was tender and indicative of tubal disease. The hip joint was mobile, not shortened, and was free from deformity or roughness, and besides there was nothing to indicate that it had ever been the seat of tubercular disease, or any bone malady whatsoever.

There also were present at this consultation the attending physician and Dr. B. H. Daggett, of Buffalo, a surgeon of experience, and it was the opinion that there never had been any joint disease, but that the woman had suffered from reflex pain in the hip caused by recurrent pelvic inflammation, of the existence of which latter we found unmistakable evidence.

The counsel for the prosecution at the trial contended that the woman had received an injury at the time of the alleged fall, which subsequently caused the birth of a still-born child, and which also produced hip-joint disease; that a competent surgeon had been employed, who cured the hip in a few weeks, so that now no trace of the disease remained, and that the woman was practically well, but that damages were asked on account of the ill health which ensued as a direct result of the alleged injury and which subsequently caused the still-birth. On the other hand, the defence maintained that the woman was seized with pelvic peritonitis, due to disease of the appendages; that she had several recurrent attacks prior to delivery; that subsequent to delivery she suffered from joint reflexes incident to the repeated attacks of local or pelvic peritonitis, and that subsequently she recovered therefrom in so far as the joint itself was concerned. It was further contended that the masses still within the pelvis were indicative of thickened and inflamed tubes, and that she was yet liable to

recurrences of similar attacks. The theory for the prosecution was supported by the attending physician and the surgeon who treated the joint for hip disease. The theory of the defendants was supported by the testimony of Dr. Mann, Dr. Daggett, and myself. A verdict was given the plaintiff for about \$2,000, as I remember, the claim having been for a much larger sum. An appeal was taken.

I have been somewhat minute in this description, so that the medico-legal bearing of all the essential points may be placed before the Association for discussion.

Remarks.—The reflexes pertaining to diseases of the pelvic organs in women are many and various. For the most part they have been recognized and well described by writers, and have come to be understood as such common accompaniments of these disorders that very little remains to be said in regard to the majority of them. These reflexes are manifested through both the cerebro-spinal and the vaso-motor system of nerves. They are of a character, generally speaking, to make a woman more miserable than the disease which is their underlying cause, the *fons et origo* of her ill health. Many of them have become classic and have been amply catalogued in the text books. It is my purpose at this time to direct the attention of the Association especially to a class of reflex symptoms which are frequently manifest during the course of or consecutive to pelvic inflammation, and which I have seen manifested in the larger joints, especially the hip and knee.

I presume it has fallen to the lot of many in this presence often to have seen women who have complained of pain in the joints and extremities during the progress of pelvic disease, and which they have recognized readily as reflex in character. It has been a frequent occurrence in my own observation to meet with such, but it is not common to meet with a case where the symptoms were apparently so clearly misinterpreted and such extreme treatment applied as in the one related. It is a common observation that general surgeons are apt to misinterpret the real import of symptoms in cases of a similar nature, which of course logically leads to the misapplication of remedial measures. There is no intent in these criticisms to reflect on the skill of those who practise general

surgery. In the management of these cases they are, in the opinion of many, simply out of their legitimate sphere.

If we reflect a moment on the peculiar relationship of the hip joint to the pelvis, and particularly upon its intimate nerve communication with the pelvic organs, we shall be able to appreciate the great liability it has to sympathy with any disease located in those organs. A low-down backache has always been regarded as one of the commoner symptoms connected with pelvic disorder, and it is very easy to understand how a disturbance of the cord in this locality may be carried downward and outward through the sacro-sciatic foramen, along the great sciatic nerve, and, by its articular branch, into the joint itself. The deep gluteal region and the structures surrounding are often the seat of severe and continued pain, as we have all many times observed, and it is quite possible that neuralgia, rheumatism, and various other names have been given because of these symptoms, when in reality they were only reflexes of true pelvic disease.

The attention of the Association is invited to a paper by Dr. R. H. Sayre, read at a recent meeting of the Orthopedic Section of the New York Academy of Medicine, entitled "The Importance of Thorough Examination in Suspected Pott's Disease."¹ In this paper Dr. Sayre refers to the fact that many cases have been treated for genuine Pott's disease, with corsets and braces, that were afterward ascertained to be due to disease of the pelvic organs with spinal reflexes simulating Pott's disease. He had himself treated a lady, 26 years of age, who had received an injury of the right hip, which was followed by severe pain in the back and lower extremities. These pains were worse at night. A prominent physician whom she consulted pronounced her case Pott's disease and applied a leather corset. She grew worse under this treatment, until there was loss of power in both legs and arms. Two other competent physicians made a similar diagnosis, and various braces and plaster jackets were applied without benefit. When she first came to the author she was still wearing a plaster jacket, though she could then walk with difficulty and was bent forward. She suffered pain

¹ Buffalo Medical and Surgical Journal, vol. xxx., p. 537.

from every jar; there was rigidity of the spinal muscles, and she complained of pains in the lower part of the abdomen, running down the thighs. In this case the uterus was found to be retroverted and bound down by adhesions, and Alexander's operation, followed by the use of a pessary, faradism, and other measures, finally restored her to health. He related two other cases of a similar nature. From this it would seem as though the spinal cord and its various projections furnished a favorite field for the manifestation of pelvic reflexes, and it is in the hope that further light may be thrown upon this important field of research that I have introduced the subject for discussion before the Association at this time.

The principal points of emphasis are :

1. The intimate anatomical relations between the pelvic organs and the larger joints of the lower extremities, especially the hip and knee joint, render them liable to reflexes.

2. The importance of careful primary diagnosis, lest grave errors and possible disastrous consequences may result from treatment.

3. The medico-legal bearing that errors of judgment in diagnosis and treatment may have in relation to the patient, as well as upon the reputation of the physician.

284 FRANKLIN STREET.

THE PEDICLE IN HYSTERECTOMY:

HOW FORMED; ITS SUBSEQUENT BEHAVIOR; ITS FINAL CONDITION.¹

BY

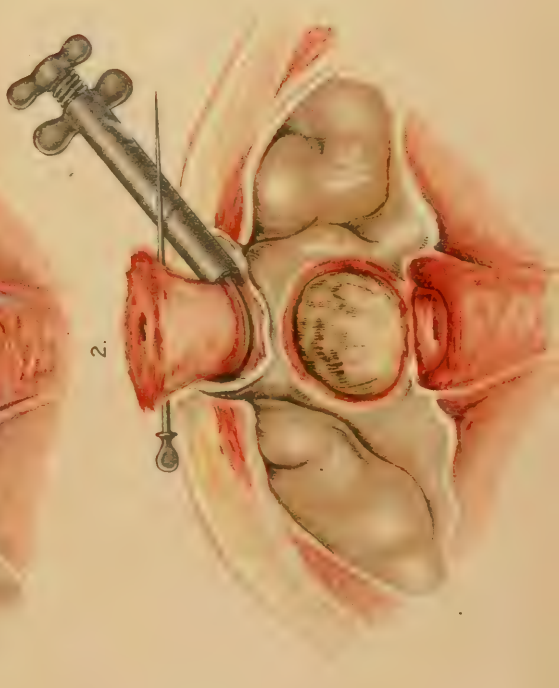
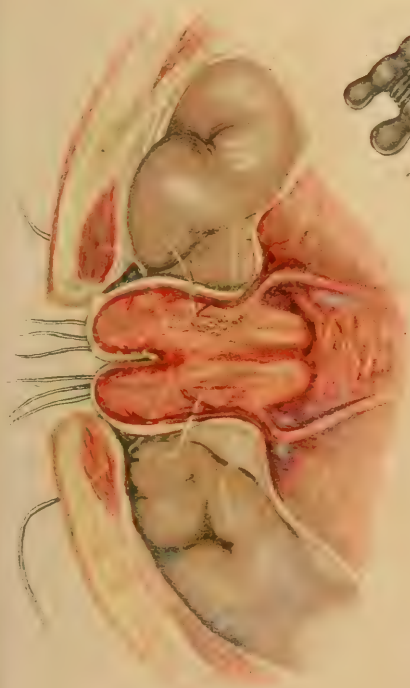
I. S. STONE, M.D.,

Late Member of the Board of Medical Examiners of Virginia; Fellow of the American Association of Obstetricians and Gynecologists, and of the British Gynecological Society; Surgeon to Columbia Hospital for Women, etc., Washington, D. C.

(With colored plate.)

THIS subject may well be discussed at the present time, as there is, without doubt, a revival of interest in the opera-

¹ Read at the fourth annual meeting of the Southern Surgical and Gynecological Association, at Richmond, November 11th, 1891.



tion of supravaginal hysterectomy and a growing demand for its performance. We note, in proof of this declaration, the improved statistics, which are now far better than those of ovariectomy after it had become a well-established procedure. Thus in 1873 hysterectomy gave, according to Boinet, a mortality of 76.2 per cent; in 1875, according to Pozzi, a mortality of 64.7 per cent; in 1879, according to Le Toursey, a mortality of 43 per cent; in 1882, according to Thornton, a mortality of 40 per cent; in 1883, according to Schwartz, a mortality of 37.5 per cent; in 1884, according to Amiot, a mortality of 25.32 per cent, while at the present time several operators have reached 9 per cent, which is about the best yet attained, save in a few brilliant instances that the majority may scarcely hope to equal. When we reflect that Burnham did the first successful extirpation of the uterus in 1853, these latter results are indeed a cause for congratulation. We notice, in reviewing the literature of hysterectomy, that authors have shown decidedly better results from simple myomectomy, where the uterus is left in its entirety. There is also less risk from enucleation of myomata than in the entire removal of the uterus. We shall first refer to

The Extraperitoneal Method.—The tumor is drawn well out of the incision and all adhesions tied off. The surgeon must at once decide the question as to the plan of dealing with the broad ligaments, which are usually found stretched upon the growth on either side. Should the mass prove to be pediculated, it may not be necessary to tie the ligaments or remove the uterine appendages, unless the latter are diseased. But the surgeon will generally find necessity for getting down further into the pelvis, and in order to do this must sever the broad ligaments, tie them securely, and drop them, or clamp them with large pressure forceps and leave them to be dealt with after the tumor has been removed. It is worthy of remark that most surgeons now tie the broad ligaments and then surround the base of the growth with a temporary elastic ligature before cutting away the tumor, thus avoiding hemorrhage. Mr. Tait has reduced his mortality from 35.7 per cent to 11.3 per cent by thus getting rid of the traction exerted by these ligaments upon the pedicle. Although many cases will require the use of the elastic ligature of Kleeburg,

it is still probable that some surgeons may continue to use the wire only. Yet it is quite possible that in the future other methods may greatly grow in favor and the wire of Koeberle be less in vogue. In either case the elastic ligature is convenient, and does not prevent the after-use of wire if it is desired to complete the operation extraperitoneally. Until recent date Mr. Keith had the best record of success, preferring the clamp for the pedicle. To Dr. Bantock has been accorded the credit of bringing the "extraperitoneal method" with the wire to its present state of perfection, although he says Péan deserves the honor of its introduction to public favor. Dr. Bantock uses his modification of the Koeberle *serre-nœud* and a peculiar wire made, according to his direction, of "delta metal." He does not always use the elastic ligature, but uses the *serre-nœud* whenever it is possible. The capsule of the tumor is in some cases cut and stripped down for some inches, leaving the myomatous tissue uncovered, and the wire is applied to this *outside the peritoneum*. The capsule is sewed to the peritoneum or abdominal wall, as thought best by the operator, thus leaving the abdomen quite securely closed. In many cases the wire may be thrown around the base of the tumor as soon as it is drawn from the abdomen; there may be a well-shaped pedicle; the broad ligaments may not interfere, or may be included with the pedicle in the wire; the Fallopian tubes and ovaries may likewise require no special care, and are by some surgeons included in the wire and removed with the tumor. These cases afford the surgeon an opportunity to quickly finish an important operation where the patient is *in extremis* from any cause. There can be no doubt of the value of this quick method of securing the pedicle in many cases, but there is still a desire to avoid the inevitable necrosis of the constricted tissues, which may yet result in a better operation. The other methods of extraperitoneal treatment by elastic ligature, as done by Hegar and Kaltenbach, do not necessitate detailed description here, as they are not only described in the text books, but in reality require just the same formation of the pedicle.

The Intraperitoneal Method.—In any operation we may unexpectedly meet with disaster or be obliged to change our

course in order to avoid it. Thus, in hysterectomy we may plan to do as Bantock, Tait, Price, or others may suggest, but, owing to the nature of the growth or its attachments, we are obliged to leave out of consideration altogether what others have done, and act according to what may be best, even though it may involve an untried problem. We shall always be occasionally compelled to complete a hysterectomy after the method of Schröder, even though the best results do not follow this treatment of the pedicle. Therefore a few words on the best plan of arranging the stump may not be untimely. By reference to the plate we may see at a glance what it is quite difficult to describe. While this method requires more time than the usual plan of fixing the pedicle in the wound, it possesses the following desirable features: 1, It allows a closed abdominal wound, unless drainage is necessary; 2, avoidance of the usual raw surface as in extraperitoneal cases; and 3, by it we may safely complete an operation where the pedicle cannot be made to reach the abdominal wound. While the danger of hemorrhage has heretofore caused this method to be avoided, there should no longer be any hesitation upon that plea. If there is the same care exercised in the technique of this operation as in other difficult cases, there should be very little danger of sepsis. These two principal objections may be removed by carefully following the suggestions which accompany the plate. But there remains one very important objection to be overcome which may prevent this plan from being adopted by preference—the *element of time*. There seems to be no way of reducing the time required to perform this operation properly under one hour. The old plan of ligating the base of any sized fibroid with silk or other material, and cutting away the tumor, thus leaving a broad, raw surface within the abdomen to slough or bleed or otherwise imperil the life of the woman, is probably *forever a thing of the past*. But there may be need for some plan for the intraperitoneal treatment of the pedicle, and I respectfully call the attention of the Society to the modifications suggested in the plate.

The "Ventre-Fixation Method."—This modification of the two preceding methods is intended to fill an important place in the operation of hysterectomy. It is without doubt useful

in some cases of short pedicle, and is otherwise to be selected in preference to the other methods. But the most important and beneficial results are following its performance, and it is first of all giving a *short convalescence*. Fritsch¹ first used this method and popularized it, having nineteen cases without a death. Then Sanger and Kelly have reported very successful results.

The plate, Fig. 2, shows the position of the pedicle and its relation to the wound. The parietal peritoneum is sewed to that of the pedicle below the approximation sutures, and any bleeding or oozing of serum from its upper surface must escape outside the abdominal cavity. The pedicle is arranged just as it should be for the intraperitoneal treatment. A drainage tube may be left in the cavity, if required. The suspensory sutures of silkworm gut are very satisfactory and may be removed in one week. They are not tied, but are merely twisted, and are removed with perfect ease by untwisting; and I prefer cutting one side short, as in removing sutures in abdominal incision, to avoid infecting the tract as they are withdrawn.

The operation has done well in my hands, and I have only to commend it. The nature of the capsule, its tendency to contract and cause separation of sutures or slipping of ligatures, will always cause very much greater care to be exer-

¹ See Hart and Barbour, p. 440.

EXPLANATION OF PLATE.

FIG. 1 shows *serre-nœud* applied after capsule is separated from the pedicle. The pin is not always necessary, as the capsule may be secured to the abdominal wall.

FIG. 2, transverse section of abdomen, showing pedicle in position under the wound. The uterine arteries are shown surrounded by ligatures. The suspensory sutures and those used in closing in the capsule and reducing the stump are shown. Note the suture passing through the abdominal wall and then through the pedicle. Two of these are used.

FIG. 3 shows the application of the elastic ligature after section of broad ligaments. The capsule has been separated from the tumor, and tumor cut below its free border. The dotted lines show portion to be excavated. The capsule may be sewed down upon this surface if pedicle is too short to fasten in the wound; or the wire may be applied to the capsule above the uterine tissues, and the usual course pursued in extra-peritoneal method.

FIG. 4, section of pedicle as arranged for *intraperitoneal method*. The myomatous tissue has been well excavated; the cervical canal cauterized if opened. The uterine arteries are ligated. Catgut sutures have closed up the interior surface and hold the capsular surface down into the sulcus. Silk sutures may be used above to give greater security. This arrangement provides against hemorrhage from contraction of the capsule, and consequent opening of the wound. The pedicle, when thus treated, is equally well adapted to be sewed in the wound or dropped.

cised in treating the pedicle and wound in hysterectomy than in ovariectomy; but we are confident that success will follow in this operation along the lines mentioned in this paper, rather than in any operation requiring entire removal of the stump of the uterus (Frennd's operation), or by turning the pedicle into the vagina as suggested by Byford.

The Subsequent Behavior of the Pedicle.—When the pedicle is properly arranged and adjusted in or below the abdominal incision, the peritoneal surfaces soon become adherent and prevent the escape of fluids into the cavity. It is an easy matter to place a few catgut sutures, which give additional security, and the author always adopts this safeguard. The wire or clamp, when kept tight, may soon cut off the stump above it, as in one of my cases in four days. But, on the contrary, the wire may remain so long that it becomes a difficult matter to remove it. I have seen the wire remain nearly three weeks. It is not necessary to say how long such powerful pressure as that exerted by a Koeberle *serre-nœud* may be required to crush and even separate any pedicle, but this is true, that *no long-continued pressure is needed*. It will probably be found that the wire in these prolonged cases has been overgrown by healthy granulations, and its presence is unnecessary and possibly hurtful. In a word, from seven to ten days is long enough. If there are any who think that the wire can produce a "dry necrosis" without the usual concomitant signs of sloughing, they are sure to meet with disappointment. I frankly confess to have always seen it, and do not know why there should be any claim made to prevent suppuration in these more than in any other conditions where the nerve and blood supply are positively cut off. There is always necrosis, extending some distance below the wire. In all cases under my observation it was found that considerable discharge came from the centre of the pedicle, and a "pit" extended down several inches and of course into the base of the pedicle. It is my belief that all pedicles are reduced greatly in size after the operation through the agency and by reason of this discharge of degenerated or necrosed myomatous tissue. Should there be left in the pedicle a centre of myomatous development, there will be formed another tumor, unless its liberation occurs in the manner described, or as in a

case of Homans',¹ where a myoma was removed from the uterus, leaving a broad base several inches in diameter. The patient did fairly well until about the time the stitches were removed, when the base of the myoma began to be extruded through the wound. After much coaxing by rubber bands, the mass was brought away (the base being cut off by silk cord), weighing four pounds. In this case the patient recovered, although there was rise of temperature and much anxiety was felt as to her condition.

These remarks are made strictly in view of the extraperitoneal method of treatment of the pedicle. In the cases of intraperitoneal treatment there is much room for speculation as to the process of involution through which the pedicle passes. It is probable that in all cases the reduction in size—which I have noticed in all cases where opportunity was afforded—is due to a fatty degeneration occurring in the portion of myomatous tissue remaining enclosed in the capsule of the pedicle, and aided by the pressure of the remaining uterine muscular contraction and blood supply. When the pedicle is secured in the wound and is amputated by a wire or clamp, it is quite certain that the granulating surfaces of abdominal wall and uterine or capsular tissues interlace and become as one mass. The pedicle in these cases remains firmly secured in and under the wound. In the method by fixation the adhesions formed between peritoneum and peritoneum appear to answer equally well; for in at least all the cases observed there was firm fixation to the abdominal wall. In the subfixation cases all traction is reduced to the minimum by severing the broad ligaments; but should there be traction exerted following any method, the pedicle will be drawn downward, and finally a suspensory ligament will be formed of peritoneum, long enough to leave the cervix uteri quite free and movable, as I have more than once observed.

In conclusion I have but to mention the statistics of three principal methods used by operators in supravaginal hysterectomy: ²

For the extraperitoneal fixation, 82.75 in 100 cases cured.

¹ Vide Boston Med. and Surg. Jour., April, 1885, page 314.

² Amiot's Thesis.

For the ventro-fixation method, or "mixed method with drainage," 75 cures in 100 cases.

For the intraperitoneal, 59.53 cures in 100.

These figures give only relative information. They are taken from results of all operators. In the hands of some the second, or ventro-fixation, gives as good or better results than either of the others.

My thanks are due to my friend Dr. W. P. Carr, of Washington, for assistance in the preparation of the illustrations.

THE IDEAL DRESSING FOR THE ABDOMINAL WOUND.

BY

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ONE of my earliest efforts in abdominal surgery was to improve the dressing of the wound in the abdominal wall. The dressings then and now in use consisted of layers of cotton, sterilized or impregnated with antiseptic solutions, or alternating layers of various impermeable or antiseptic substances. The whole purpose of such a method clearly depends upon preventing access of pathogenic germs to the wound by heaping up impassable barriers on the patient's belly. To the practical eye noting the impossibility of affording adequate protection of this sort around the mons veneris and the creases of the thigh, where septic matter is most prone to enter, the inconsistencies are but too evident; for every movement of the patient which slides the dressings a little on the body and tends to displace them, as well as the necessary attentions to the genitals on the part of the nurse, each time open up this avenue of infection. Convinced of these facts, I abandoned this form of dressing and adopted a variety of dry and moist dressings, all the time casting about in my mind to determine just what was needed to establish an ideal dressing.

The ideal dressing would seem to be a solution or paste which would quickly harden until it formed a thin, flexible, impenetrable layer over the wound and the surrounding skin, which would be thus hermetically sealed, in this way absolutely preventing any invasion of the wound from the outside and preserving the aseptic conditions established at the operation. It would also be desirable, if possible, to add to these qualities the property of transparency, allowing the line of the wound and the stitches to remain under constant observation, noting changes without disturbing the dressing. A dressing possessing such qualifications may certainly be named ideal.

My researches have been in large measure rewarded ; for, although unable to secure a transparent dressing unaffected by cotton or other protective in contact with it, I have found, and for two years past used, a dressing which hermetically seals the wound in a thin layer, with certainty preventing the invasion of pathogenic organisms from without. This dressing is easily made, simple, and always satisfactory. After closure of the incision, the skin, the line of the wound, and the sutures are dried, and two layers of sterilized gauze or cheese-cloth, large enough to project five to ten centimetres (two to four inches) beyond the incision on all sides, laid on the skin. This is saturated with the following adhesive mixture, which is evenly distributed over the whole surface.

℞ Squibb's Ether, or Washed Ether, and
 Alcohol, absolute.....equal parts
 Bichloride of Mercury (Merck's re-
 cryst.)....enough to make the solution $\frac{1}{16000}$
 [Anthony's] Snowy cotton, enough to make a
 syrupy consistence, added in small pieces,
 stirring.

As soon as this is poured over the wound evaporation begins to take place at once, and the celluloidin hardens, gumming the gauze fast to the skin. To avoid delay in waiting for this to grow quite hard, and to prevent adhesion to the cotton applied above it, the whole surface is freely dusted over with a finely powdered mixture of iodoform and boric acid :

R Pulvis Iodoformi. 4 grammes, or 1 drachm.
 Acidi Borici. 28 grammes, or 7 drachms.
 M. exactissime. S. Dust freely on wound.

This powder is of itself an invaluable protective. I use it constantly in obstetric cases, separating the labia and throwing it into the vagina, where it acts as a guard to the vaginal outlet against septic invasion from without.

The wound thus sealed with celluloidin gauze may be left untouched for a week or more, when the dressing should be softened with water, or more rapidly with ether, the gauze lifted off, and the stitches taken out.

If there are any signs of suppuration, as evinced by pain, local tenderness and redness, associated with elevated temperature, the dressing should be removed earlier and the discharge of the stitch-hole abscess promoted in the usual way.

The purpose of cotton heaped up on the abdomen is now no longer protective and antiseptic; it merely serves the purpose of padding out the inequalities for the application of the bandage. Common cotton may be substituted for absorbent and prepared cotton, by simply sterilizing it in the Arnold steam-sterilizer.

LAPARATOMIES PERFORMED DURING THE PAST YEAR.¹

BY

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IN new fields the caution and deliberation of the profession are especially commendable. The experience of many observers is desired; full and free discussion is sought; extensive statistics are essential.

Every narrator of his personal experience should, when before the tribunal of the profession, feel that the withholding of a single error of omission or commission vitiates his

¹ Read at the fourth annual meeting of the Southern Surgical and Gynecological Association, at Richmond, November 11th, 1891.

confession. We want the truth, but more, we earnestly desire the whole truth. Statistics framed in this spirit are invaluable to the profession and therefore to the human family. In other words, "every man should be his own critic."

The accompanying tabulated statement embraces thirty-two abdominal sections made in the twelve months beginning November 1st, 1890, and ending October 31st, 1891. This list does not include the whole number of laparatomies performed at the Baltimore City Hospital during the time stated, since this institution opens its doors to all operators, of good professional standing, who may see fit to attend and operate on such cases within its walls. (See pages 1454 to 1459)

The writer had the misfortune to receive an attack of septic empoisonment on December 10th, 1889, from the prick of a pedicle needle, while performing a laparotomy on a case of septic peritonitis. This report therefore represents his first year's work immediately following that interruption, which lasted nearly a year. . . . Whatever there has been of error in my work, I will, as frankly and as fully as I know how to do, place it before you.

The operations were performed consecutively as set forth in the accompanying table. They were: Ovarian tumors, 6; chronic ovaritis, 7; fibroid tumors, 4; pyo-salpinx, 5, retroflexion with adhesions and dysmenorrhea, 3; exploratory incisions, 3; extra-uterine pregnancy, 1; abscess of ovary, 1; cyst of broad ligament, 1; cystic degeneration of ovary, 1—total, 32.

Nine of these patients came to me through the dispensary connected with the college, and were operated on in the amphitheatre before the whole class at the College of Physicians and Surgeons. The remainder, twenty-three, were operated on privately. Twenty-seven were white and five were colored.

Deaths.—The deaths were as follows: Oöphorectomy for pyo-salpinx, 1; shock from ovariectomy, 1; oöphorectomy for acute mania, 1; abdominal hysterectomy for fibro-cystic tumor, 1—total, 4.

No attempt will be made to describe fully each individual case, but the classification will admit of a separate discussion of the various classes of disease or operations, and enable the

reader to select what seems of special interest. In such a report as this the deaths are commonly regarded as a stigma, nevertheless they are usually instructive. I must consequently trespass upon your time with the details of each one of them.

CASE VII.—Colored servant, single, had received dispensary treatment for several months for gonorrhea. The diagnosis was made out, correctly as the sequel proved, as gonorrheal pyo-salpinx. The urgent necessity for surgical interference was impressed upon the patient, but the operation was long deferred. On the 5th of February, 1891, a laparotomy was performed. Both ovaries and both tubes were matted together and adherent to the intestines in the posterior cul-de-sac. They were with difficulty removed. The left tube burst in detaching it, and its virulent contents were discharged into the peritoneal cavity. Pus was easily squeezed out of both tubes after removal. The abdomen was flushed out. Alarming hemorrhage ensued from the denuded surfaces of the cul-de-sac, which was arrested by packing it firmly with iodoform gauze. This was removed in six hours. Her temperature rose to 101° during the night and reached 103° the next day; pulse 130. She died on the third day of septic peritonitis.

Post-mortem: Flaky lymph and pus over intestines. No fluid in abdomen. Ligatures had held securely.

CASE X., white, age 50, married, visited me at the hospital about February, 1891; received an opinion that she had an ovarian tumor which was fully developed and should be removed at once. This advice was disregarded. She returned home and remained there until about six or seven weeks later. She was admitted on the 16th of March, and operated upon on the 19th. Her condition was bad. Her temperature was 100° and pulse rapid. Her abdomen was tender on palpation. The colloid contents and the solid elements of the tumor weighed over twenty pounds. The whole abdominal wall seemed ablaze with inflammation; the intestines were largely adherent to the tumor and matted together. The contents of the tumor would not run, but had to be scraped out piecemeal by the hand. She was profoundly shocked. Hypodermics were given freely; milk, beef tea, and whiskey were

administered per rectum. Though retained, they were of no avail. Death ensued at 3 A.M., I think from surgical and chloroform shock.

Post-mortem: No blood in abdomen whatever; abdominal cavity perfectly dry. Ligatures secure. Viscera healthy.

CASE XVIII.—White, age 18, single, family history good. Had had periodical attacks of mania. The first attack came on simultaneously with her menstrual flow at 15 years of age. Her menstruation was always accompanied by severe pain. Six months ago she had so severe an attack of mania that she was sent to an asylum. On the third day after the operation mania set in. She could not be kept in bed. It was impossible to keep her bandage on. She grew more and more violent, and died from sepsis July 1st, 1891, thirteen days after the operation.

Post-mortem by Prof. Kierle; complete post-mortem not allowed: Kidneys markedly congested. No fluid in abdomen. Lungs congested. Brain not examined; probable cause of death here.

CASE XXXII.—White, married when 21 years of age, sixteen years ago; had three children and one miscarriage. Five years ago noticed tumor in her abdomen, which gradually grew larger and was said to be an ovarian cystoma. She suffered from frequent hemorrhages; they were profuse and at irregular intervals. On examination a tumor as large as a man's head was found in the abdomen. The uterine probe ran up into it three-fourths of its length. An abdominal incision was made about eight inches long; the tumor was lifted out of the abdomen and secured by Baker Brown's clamp. The bleeding was readily controlled and the peritoneal cavity flushed. The abdominal wall was closed with silkworm gut and the stump secured at the lower angle of the wound. Though severely shocked, she rallied well. The mass, comprising the fibroid, womb, ovaries, and tubes, weighed ten pounds. The patient did well for three or four days, but after this her pulse and temperature began to rise, and she died on the seventh day of septic peritonitis.

Post-mortem by Prof. Kierle: Wound had entirely healed up; the clamp was tightly holding the stump. Abdomen contained two ounces of bloody fluid. The intestines were adhe-

rent and covered with inflammatory lymph. Kidney soft and fatty; liver fatty. Death from septic peritonitis.

Exploratory Laparotomy. CASE IV.—Age 46; operation January 4th, 1891. The exploration revealed malignant degeneration of the left ovary, with cancerous cysts studding the peritoneum and intestines. A large amount of abdominal fluid was removed. The cavity was thoroughly flushed and the walls closed. Patient returned home in three weeks, temporarily greatly improved.

CASE XXII.—Age 25, married, sterile. Operation September 1st, 1891. A large malignant growth was found in the left side, involving the corresponding ovary and the liver. Patient had icterus at the time of operation. Stitches removed on the eighth day. She improved rapidly, and returned to her home in good spirits.

CASE XXVI.—M. O., age 33, widow. Operation September 26th, 1891. Had two children and one miscarriage during wedlock. Performed criminal abortion with a tortoise shell bonnet pin. On admission a digital examination was made. The pelvis was blocked with exudates. In the centre of the posterior cul-de-sac was a boggy point, the field all around solid to the touch. Percussion and palpation indicated the extension of the inflammation and effusion high up on the left side of the abdomen. The temperature in the mornings was about 101° , in the evenings about $102\frac{1}{2}^{\circ}$ to 103° .

An exploratory incision was decided upon and made in the median line. Because of the strong resistant adhesions and exudation it was impossible to explore the pelvis. A large amount of bloody serum was flushed out. The temperature at the time of operation, 102° , began to decline at once; the effusion was gradually absorbed, and at the end of three weeks there was no sign of the pelvic trouble.

Drainage was not used in any one of the three cases.

The number of these cases is too small to prove anything, but they are suggestive and add to already strong testimony which is recorded that a laparotomy done in a thoroughly aseptic manner is a warrantable resort when the indications are threatening and the diagnosis doubtful.

Ovarian Tumors.—The six cases of ovariectomy made good recoveries, with the exception of No. X., in which extensive

peritonitis was found on opening the abdomen. This case is reported among the deaths.

CASE II., white, single, age 38, was interesting, since, in addition to the cystoma of the right ovary which contained two and a half gallons of fluid, there was on the left side a dermoid cyst the size of a child's head. The contents consisted of bone, hair, etc. The pedicle of this tumor was four inches wide, hence there was some difficulty in constricting it efficiently, even in sections. This patient, strange to say, menstruated regularly up to August 25th, 1890, within three months of the time of operation. She suffered from attacks of mental aberration during a year prior to the operation. Excellent recovery ensued, both mentally and physically, which has been maintained without interruption from the time of the operation up to this date.

CASE XXI.—White, single, age 16. Her abdomen approximated the size of a woman at full term. She and her friends noticed the enlargement of her abdomen for the first time four years ago, when she was 12 years of age. It is fair to conjecture that the tumor had filled the pelvis, and, like the pregnant uterus, had developed into the abdominal cavity. If there is a parallel between the nutritive growths in these two conditions, this tumor must have started at a very early age—possibly when she was 8 or 10 years of age. Her first menstruation was in January last, and it recurred irregularly afterwards. She bore the operation and the subsequent treatment with greatest fortitude and made an excellent recovery.

The other four cases of ovarian tumor presented nothing of special interest, save their complete and permanent recovery.

Chronic Ovaritis.—In this class there were six. Among them was CASE XVII., single, age 20. She began to menstruate at 15. Her first epileptiform spasm began coincidentally with this event. From that time up to the time of the operation she had these attacks both during the interim and at the time of the menses. The attacks were more severe just preceding the establishment of the flow. They were attended by convulsive movements of a pronounced character, followed by a period of stupor and sleep lasting fifteen or twenty minutes. At other times they were caused by fatigue, by

mental worry or excitement. The intermenstrual spasms were attended by slight twitchings and short sleep.

Her friends, prior to seeking relief by oöphorectomy, had spent quite a fortune in their efforts to cure her, having had her under the treatment of some of the most eminent neurologists in New York. Electricity, massage, drugs—all in turn proved unavailing. No difficulties arose in the operation. A few days after the operation she had several spasms, but no harm ensued from them. Convalescence was uninterrupted and rapid. She spent several weeks at the seashore, and paid me a visit on her return home. The young lady had gained notably in weight and strength, but the intermenstrual form of the attacks still recurred. At this writing I am unable to state her condition.

CASE XII.—White, single, age 21; sickly since childhood. Her menses were established at 17; about that time she had a severe attack of typhoid fever. For six months prior to the operation of oöphorectomy she had been bed-ridden. She was hopeless, dyspeptic, and anemic in the extreme degree. Her neuralgic headaches and ovarian pains were intolerable at each menstrual epoch. She readily accepted the proposal to remove the ovaries. The operation was borne courageously and her convalescence was uninterruptedly good. Upon her return to her home in Baltimore she relapsed into her former despondent condition. She has not fulfilled my expectations as to complete cure, though she has improved physically.

CASE XIV.—Age 23, white, single. Was healthy until 13, when menstruation began. At first the recurrences of it were painless and regular. An interruption of four months occurred, and dysmenorrhea, menorrhagia, and ill health followed. Tormented by her physical pains and disqualification, and her inability to support her aged parents, she sought oöphorectomy as a last resort. It has brought about excellent health and capabilities.

CASE XVI.—White, age 22, single. Unlike the preceding case, had led a life of luxury and ease. Her dysmenorrheal pains in defecation and general depreciation in health during five years caused her family to seek the removal of the ovaries. Perfect satisfaction as to health, cheerfulness, and comfort has come both to her and to her friends.

CASE XXVII.—Age 39, colored, washerwoman, widow. Operation October 8th, 1891. Had one full-term child and one miscarriage. This patient was operated on by me one year ago for a deep laceration of the cervix. While the parts healed well, she was not benefited, as far as her distressing and disqualifying dysmenorrhea was concerned. The appendages were removed. She is still in the hospital. All the indications betoken a happy issue out of her afflictions.

CASE XVIII. is reported among the deaths.

It is noteworthy that five out of six of these cases of chronic ovaritis were single, and that their ages ranged from 18 to 23 years.

Pyo-salpinx.—The five cases under this heading all made good recoveries but one (Case VII.). It is interesting to relate, as bearing on the etiology of this disease, that every one of these cases was undoubtedly gonorrheal in origin.

Two had been under treatment in our dispensary by Dr. W. S. Gardner, and the other three were ladies who were innocent victims to the viciousness of their husbands. I prescribed for one of the males, a short time prior to marriage, for gonorrhea, and was greatly astonished, not long after that event, to find him with a bride whom he had infected with the same disease. Six months later the uterine appendages were removed. The other two confessed to having transmitted the disease to their wives. One of the cases was an extremely critical one, since a pus tube had burst and discharged through the rectum three months prior to the operation. From that date the lady was disqualified for any household duty.

Fibroid Tumors.—Two abdominal hysterectomies were performed for fibro-cystic degeneration of the uterus. The first was

CASE XI.—The abdominal incision was fourteen and a half inches long from the sternum to the pubis. The tumor weighed over twenty pounds. Its vertical circumference measured twenty-three and a half inches, and its transverse circumference twenty-three and three-quarter. There was, in view of the very large pedicle, considerable difficulty in securing her against hemorrhage, hence the intra-abdominal method of treatment would most likely have failed had it

been resorted to. A full description of this case has already been published in the proceedings for the A. M. A. of 1891. The patient was unburdened, and health is now being enjoyed.

CASE XXXII., the second, died.

CASE XXIV. gave the following history: Her first intimation of a tumor was October 18th, 1890. While playing on the piano she had a rush of blood which filled a chamber. This was the time of her menstrual flow. She bled alarmingly at each menstruation. Prior to operation she had bled continuously for a month. Diagnosis was intramural fibroids, chiefly occupying the posterior wall. The pelvis was well filled by the tumor. Due preparation was made for a hysterectomy, but as the ovaries were happily in front they were removed. Not a drop of blood has appeared since the operation. She made a good recovery.

CASE V. was one of subperitoneal fibroids. The patient had been bed-ridden for six months, though sick and disqualified for all the duties of a wife for years. The uterus was retroflexed by a fibroma, the size of a hen's egg, situated on the upper posterior part of the fundus. In addition to this there was a small intramural fibroid, the size of a filbert, located on the posterior wall at the junction of the body and neck. Myomectomy was done and both ovaries and tubes were removed; she has made a good recovery.

Hysterorrhaphy.—In two cases, No. I. and No. XXV., hysterorrhaphy was performed, after the removal of the appendages, for retroflexion of the uterus with chronic ovaritis and dysmenorrhea.

The first case I performed on November 13th, 1890, suturing through the stump of the uterine appendages, without scraping or otherwise injuring the uterine wall. The outer parts of the sutures were cut off at the end of two weeks, and the remaining parts allowed to fall back into the abdomen.

In the second case, No. XXV., the sutures were simply made to pierce (without tying) the ovarian ligament, and brought through the abdominal wall opposite their respective insertions about one and one-half inches from the incision, and tied over a bridge of skin a half-inch wide. In two weeks they were removed by cutting one side and drawing them out entirely.

Both cases when discharged were in excellent condition. The uterus in each case was well secured in its rectified position, as attested by several competent examiners. Further time is necessary to establish the permanency and value of these operations.

Cystic Degeneration of Ovary complicated by Pregnancy.—CASE XXIII., married, 23 years old, has had no full-term children, but three miscarriages during the first third of gestation. Patient had been subjected to considerable local treatment without avail. Her present trouble with the left ovary had been recognized during the past three years. The possibility of pregnancy was broached, but her attending physician said he had lately been making intra-uterine applications and hence was confident she could not be pregnant. On opening the abdomen the diseased ovary was readily verified; but, as the uterus was unduly large, the cervix was dilated so as to explore its contents. A fetus of six weeks was withdrawn, the ovaries were removed. The subsequent history of the case was uneventful, save that recovery was rapid and complete. The ovary on left side was represented, in the thickened portion of the wall of a cyst, the size of a walnut.

Extra-Uterine Pregnancy with a Double Uterus; Removal of Sac and the Remaining Ovary. CASE XXIX.—Age 32; had been married fifteen years, but was without offspring. Since girlhood she had been regular with menstruation. For four months past her menstruation had been scanty and irregular and her general health miserable. One month prior to the operation she was compelled to go to bed. When the patient was first examined, in consultation with Dr. Wm. Gombel, of Baltimore, her attending physician, there was a hard, resistant mass occupying the left side of the pelvis, pressing upon the rectum and causing intolerable agony. Laparotomy was determined upon. A large, encysted mass, the size of two fists, occupied the posterior and lateral regions of the pelvic basin, pushing the double uterus to the opposite side. At the outset, in enucleating it, the blood contents escaped. The sac was shelled out and the pedicle ligatured. The right ovary was removed. The abdomen was flushed, the drainage tube inserted, and the incision closed.

The double uterus was realized by sight as well as touch, it

having been held up in the incision for a satisfactory recognition by all present. There were two distinct fundi, with a deep sulcus between them. The cervix was single. The drainage tube was taken out in twenty-four hours. The patient, during about ten days, although doing well physically, had an attack of mania. Providentially she was at no time unmanageable, though she was watched with the most assiduous attention by her nurse. She entertained two vagaries, and, aside from them, was sane and logical. One was the constant dread that she was to be operated on by the doctor again, and when either of her attendants entered the room she was frantic with fright. The other departure was that she could hear her family talking in the next room. She would answer their supposed questions and plead pitifully that they be admitted. She is now perfectly sane, has gotten well of her stitch abscess which followed the drain tube, and is out of harm's way.

A microscopic examination of the tissue of the sac showed it to be placental.

Stitch Abscess.—This complication occurred nine times—a much larger number relatively than I have seen recorded heretofore. While no case proved disastrous, several were exceedingly annoying in delaying patients in hospital. They occur most frequently in cases where the drain tube has been used. The early opening of abdominal dressings for any purpose favors their occurrence. When the dressings remained intact for seven days there seemed to be greatest immunity from the stitch abscess. Dr. Welch says: "A coccus, which may appropriately be called the *staphylococcus epidermis albus*, is a nearly if not quite constant inhabitant of the epidermis, lying both superficially and also deeper than can be reached by present methods of disinfection of the skin. The coccus is found frequently in aseptic wounds. It may be the cause of disturbances, usually of a relatively slight degree, in the healing of the wound, especially when drainage tubes are inserted. It is the most common cause of stitch abscesses in wounds treated aseptically and antiseptically."

Drainage.—Drainage was resorted to in but three cases during the year.

CASE II.—ovarian and dermoid cyst—had a drainage tube

in five or six days, and I am convinced that it retarded her convalescence.

CASE XXIX.—extra-uterine pregnancy—had a tube in less than twenty-four hours. If I may judge of the necessity for it by the quantity or quality of the discharge through it, I should say it did no good. A small, superficial abscess at the entrance of the tube followed its withdrawal.

CASE XXXI.—ovarian abscess—had a drain tube in about twenty-four hours. An abscess occurred at the site of its entrance. The quart of pus which was sacculated in this case was removed without an atomic part of it touching the peritoneum or the wounded parts, otherwise her fate would have been sealed, as was the case in No. VII., where the pus tube burst and death ensued on the third day of peritonitis. Even in such a case as the latter the most we could do would be to thoroughly flush out the abdomen. I am of the opinion that there is too much flushing. Properly prepared elephant-ear sponges will do away with flushings in most cases and remove the necessity for drainage. They are efficient helps in keeping the abdomen free from infection. They can be utilized in keeping back the intestines, in occupying the cul-de-sac, in positions below the pedicle, in taking up blood or secretions, in stanching hemorrhage, in separating adhesions, in protecting the intestines while closing the abdomen. The assiduous personal attention of certain workers using the drain tubes has caused them to escape the disasters which have befallen the less careful and less skilled surgeons.

Nature's plan for curing the unsightly rents the surgeon makes when he opens the abdominal cavity is to seal hermetically the sacred cavity of the peritoneum in twenty-four hours. This kindly and providentially comports with its sensitiveness and its fitness for the cultivation of germs of disease. Does not this prompt sealing of the peritoneum speak with unmistakable logic to the point of striving hard for an aseptic operation and for securing immediate and absolute closure?

The oft-repeated removal of the dressings of the patulous drainage tube must of necessity be a very great danger; surely it favors decomposition and invites germs. All surgeons are aware that, after an anesthetic, restlessness and

jactitations are not wholly restrainable. It is easy to conceive how physical injury may accrue to the patient during this critical time from these not at all innocent smooth glass tubes. I believe drainage is doing more harm than good, and therefore ought to be abandoned by the abdominal surgeon.

There is a dual personality as well as power concerned in all surgical work. The one is the surgeon, who skilfully meets and disposes of the crises in the more mechanical part of the work, and therefore receives the plaudits of the multitude; the other is the influence behind the throne, more potent than the throne itself, which reaches beyond the eye, the touch, and the knife. I scarcely need say it is the modest yet oft-despised laboratory physician who is teaching us the hidden heaven of disease. Let us give him grateful recognition for the pivotal facts and secret springs in recent surgical success. When he says bruised tissue is a paragon field for the cultivation of infected germs, let us heed the warning and cast aside the drainage tube. Dr. Parkes says as to drainage: "Views and practices concerning drainage have materially changed even since the antiseptic era began. Our predecessors drained to permit escape of pus which they knew would form. Until lately we have drained in order to prevent its formation. We seem now to be on the eve of an era when we need to drain but little or not at all.

"We resort to drainage now only of necessity in septic or infected cases. In other cases we drain mainly from habit or from fear. Indeed, when we start afresh, as it were, without previous infection, the practice of drainage is a confession of fear or of weakness, both of which are alike unscientific and unfortunate. It even seems to me that in many cases where all other aseptic requirements have been met, we do much more harm than good by the use of drains."

ABDOMINAL SECTIONS, BALTIMORE CITY HOSPITAL.

No. Name. Color. Age. Date.	Married or single. Children.	Disease.	Operation.	Drainage. Complications. Result.	Remarks.
1. H. T. White. 30. Nov. 13th, 1890.	Married. Five.	Retroflexion. Dysmenorrhea.	Removal of both ovaries. Hysterorhaphy.	No. Stitch abscess. Recovered.	Examination before leaving the hospital showed the displacement to have been corrected. Health restored.
2. W. E. 38. Nov. 24th, 1890.	Single.....	Ovarian tumor and dermoid cyst.	Extirpation of both tumors.	Yes. Recovered.	Right ovary distended with two and a half gallons fluid. Nearly its entire surface was adherent to abdominal wall. On the left side was a dermoid cyst the size of a child's head, the pedicle of which was four inches wide. Recovery complete.
3. H. L. White. 37. Nov. 28th, 1890.	Single... ..	Chronic ovaritis, dysmenorrhea, and hysteria.	Removal of both ovaries.	No. Recovered.	A working woman, totally disabled from making a living. Was anemic, subject to dysmenorrheal pains, vertigo, and fainting fits. Health has been entirely restored.
4. B. C. 46. Jan. 4th, 1891.	Married.....	Cancer of ovary.	Exploratory laparotomy.	No. Recovered.	Large cancerous cysts studded the peritoneum and intestines. Ovaries had undergone malignant degeneration. Abdominal fluid was removed, the cavity flushed. Patient returned home in three weeks much improved.
5. P. N. White. 47. Jan. 9th, 1891.	Married.....	Subperitoneal fibroids.	Myomectomy. Oophorectomy.	No. Recovered.	Had been bed-ridden for six months, though sick for years. Uterus was retroflexed by a fibroid the size of a hen's egg on the upper posterior aspect of the fundus. This was removed. A small fibroid located on posterior wall of uterus. Hence oophorectomy. Result permanently good.
6. R. S. White. 32. Jan. 28th, 1891.	Married. Five.	Gonorrheal pyosalpinx.	Removal of both ovaries and tubes.	No. Recovered.	On the fourth day after operation menstruation seemed to be at hand, and lasted four days. Made an excellent recovery, and has seen no show since.

7. S. J. Black. 21. Feb. 5th, 1891.	Single.....	Gonorrheal pyosalpinx. Extensive adhesions.	Removal of both ovaries and tubes.	Yes. A pustule burst. Hemorrhage was very great. Died.	Patient died of sepsis on the third day. The whole of Douglas' cul-de-sac was denuded, and from this surface copious hemorrhage ensued. Bleeding was arrested by packing with iodoform gauze. Aemia most pronounced; complexion waxy; general health very bad, so much so as to render doubtful the advisability of operation. The gravity of the case stated to the friends. The results most satisfactory. Made a complete recovery. Have seen her lately in good health. Has resumed her wonted weight and vigor.
8. S. A. 22. Feb. 9th, 1891.	Married.....	Gonorrheal salpingitis. Chronic ovaritis.	Removal of both ovaries and tubes.	No. Recovered.	Patent called six weeks before operation, and was, in view of the great abdominal developments, advised to accept immediate operation. When she arrived she was suffering with peritonitis. Death took place two hours after the operation from surgical and chloroform shock.
9. S. B. White. 28. Feb. 22d, 1891.	Widow.....	Ovarian tumor....	Removal of tumor and other ovary.	No. Slight stitch abscess covered.	Incision 14½ inches. Tumor weighed 20 pounds; its vertical circumference was 23½ inches, and its transverse 22½ inches. Treated stump extraperitoneally. Temperature did not reach beyond 99° nor pulse below 80. Recovery was uninterrupted and complete.
10. W. S. White. 50. March 19th, 1891.	.....	Ovarian tumor. Peritonitis.	Removal of tumor and other ovary.	No. Died.....	Had been bed-ridden for over six months. Since 17, when her menstruation began. She gained in weight and was cheerful for a while, but relapsed into the same neurotic state as before operation. Improved physically, not mentally.
11. T. V. L. White. 48. April 20th, 1891.	Married.....	Fibro-cystic tumor of uterus.	Abdominal hysterectomy.	No. Recovered.	
12. H. J. White. 21. April 21st, 1891.	Single.....	Chronic ovaritis. Dysmenorrhea.	Removal of both ovaries.	No. Recovered.	

No. Name. Color. Age. Date.	Married or single. Children.	Disease.	Operation.	Drainage. Complications. Result.	Remarks.
13. S. M. White. 35. April 26th, 1891.	Married. Five.	Uterine retro- flexion. Ab- scess involving tube and ovary discharged through rec- tum. Painful mass on right side of pelvis. Dysmenorrhea. Anemia. Me- trorrhagia.	Removal of both ovaries, including the cellulitic mass involving the right ovary.	No. Recovered.	Hemorrhage readily controlled. Blood re- moved thoroughly by sponges which had been packed in cul-de-sac. No drainage, no flushing. Temperature did not rise above 100°. Stitches removed on tenth day. Recovery rapid. In five months has increased in weight from 130 pounds at time of operation to 160 pounds. Health excellent.
14. A. B. White. 23. May 9th, 1891.	Single.....	Dysmenorrhea. Anemia. Me- trorrhagia.	Removal of both ovaries and tubes.	No. Recovered.	A factory hand, who had been compelled to quit work on account of ill health. Has been able to resume it. Is in good health and spirits.
15. S. E. White. 28. May 11th, 1891.	Married. Three.	Ovarian tumor of right ovary ; left ovary had a cyst in it con- taining ten ounces of fluid.	Removal of tumor and the other ovary.	No. Stitch ab- scess. Recov- ered.	Made an excellent recovery, except as to the delay from the stitch abscess.
16. W. A. White. 22. May 20th, 1891.	Single... ..	Chronic ovaritis. Dysmenorrhea. Anemia.	Removal of both ovaries and tubes.	No. Stitch ab- scess. Recov- ered.	Elevation of temperature combated success- fully by salines. Two stitches removed on fifth day and the others on seventh day because of redness around them. Su- perficial suppuration continued two weeks; healing rapid. Thorough recovery.
17. S. K. White. 20. June 3d, 1891.	Single.....	Epileptiform spasms. Dys- menorrhea.	Removal of both ovaries and tubes.	No. Recovered.	Menstruation began at 15. Since then had been at every recurrence subject to fits. A number of distinguished nerve special- ists in New York and elsewhere had treated her. Massage, electricity, drugs, all alike failed. Recovery from operation excel- lent. Cure incomplete.

18. V. M. White, 18. June 18th, 1891.	Single.....	Acute mania, Dysmenorrhea.	Removal of both ovaries and tubes.	No. Died.	Had periodical attacks of mania with menses since first appearance at 15. Six months ago was in an insane asylum. A few days after operation acute mania set in. She died the eleventh day after operation. Uterus retroflexed and bound by adhesions in its malposition. Had cystitis. Was al- ways in pain. Menstruation painful and irregular; cause, a fall when 14 years old. Recovery complete.
19. S. M. L. White. 25. July 4th, 1891.	Married.....	Traumatic peri- tonitis. Retro- flexion Dis- placed and dis- eased ovary.	Removal of both ovaries and tubes.	No. Cystitis. Recovered.	Patient noticed the growth six years ago, but did not know what it was. It was claimed by her that menopause came on at 36 and growth was more rapid the last three years. When she left the hospital the abscess had not completely healed. Recovery is complete.
20. D. K. 42. July 18th, 1891.	Single	Ovarian tumor...	Removal of tumor and the other ovary.	No. Stitch ab- scess. Recov- ered.	Patient noticed her abdomen was growing larger when she was 12. She had her menses last winter several times, but the flow was scanty. Her periods were ir- regular. Had an uninterrupted and rapid recovery.
21. W. A. S. White. 16. July 29th, 1891.	Single.....	Ovarian tumor...	Removal of tumor and the other ovary.	No. Stitch ab- scess. Recov- ered.	Found a large cancerous mass in the left side, involving the liver as well as ovary. Closed the abdomen. Recovered suffi- ciently to go home.
22. L. C. White. 25. Sept. 1st, 1891.	Married. ...	Cancer of left ovary, involv- ing the intes- tines.	Exploratory lapa- ratomy.	No. Recovered.	Examination disclosed enlarged and cystic ovaries. Her physician had probed the uterus and was satisfied she could not be pregnant. She had had three miscarriages in the first third of gestation. Deter- mined after conference to remove the fe- tus and continue operation. Result ex- cellent.
23. W. E. White. 23. Sept. 2d, 1891.	Married.....	Both ovaries cys- tic. The left mass of cysts displaced in posterior cul- de-sac and ad- herent.	Removal of both ovaries and a fe- tus of six weeks.	No. Pregnancy. Recovered.	

No. Name. Color. Age. Date.	Married or single. Children.	Disease.	Operation.	Drainage. Complications. Result.	Remarks.
24. R. R. Black. 27. Sept. 9th, 1891.	Single.	Intramural fibroids. Dys- menorrhea. Menorrhagia alarming in ex- tent.	Removal of the ovaries.	No. Stitch ab- scess. Recov- ered.	Had expected to do a hysterectomy, as ute- rus was large, and it was unlikely that the ovaries could be reached, but both were in front and easily removed. Patient had some metro-peritonitis for several days, but made an excellent recovery.
25. R. A. White. 33. Sept. 24th, 1891.	Married. Two. One miscarriage	Retroflexion. Prolapsed ova- ries. Dysmen- orrhea.	Oöphorectomy. Hysterorrhaphy.	No. Stitch ab- scess. Recov- ered.	Had suffered for years with retroflexion and prolapse of ovary; was disabled for all duty. Removed both ovaries and stitched the uterus to the abdominal wall. Made a good recovery.
26. M. O. White. 38. Sept. 26th, 1891.	Two. One miscarriage	Peritonitis. He- matocele. Abortion.	Exploratory lapa- ratomy.	No. Recovered.	Time of operation, temperature 102°. It be- gan to fall at once. In three weeks the exudates were removed. Has made a per- fect recovery.
27. C. M. Black. 39. Oct. 8th, 1891.	Widow. One. One miscarriage	Chronic ovaritis. Dysmenorrhea.	Oöphorectomy..	No. Recovered.	Nothing worthy of comment, save relief from pain and promise of complete recovery.
28. S. M. L. White. 25. Oct. 18th, 1891.	Married.	Cyst in broad ligament.	Laparotomy for re- moval of cyst.	No. Recovered.	Same class as operated on July 4th, 1891. Cyst of broad ligament containing serum removed. Entire relief from pain. Re- covery uninterrupted. Is now sitting up.
29. G. L. White. 32. Oct. 17th, 1891.	Married. One.	Extra-uterine pregnancy.	Laparotomy. Re- moval of sac, with placenta and both ovaries.	Yes. Mania of a mild type. Re- covered.	Four months had scanty, irregular, and painful menstruation. She was compelled to go to bed one month ago. On opening abdomen a large sac in left iliac region

29 (continued).					strongly adherent to surrounding structures, involving tube and ovary. Microscopic examination showed placental tissue. Drain tube used twenty-four hours. Recovered.
30. B. L. White. 37. Oct. 25th, 1891.	Married. Four. One miscarriage	Pyo-salpinx.	Removal of both ovaries and tubes.	No. Recovery.	Had a clear history of gonorrhea; was under dispensary treatment three months. Flushing was used; no drainage. Recovered without unfavorable conditions.
31. B. M. Black. 32. Oct. 27th, 1891.	Married. One.	Ovarian abscess.	Extirpation of abscess sac and opposite ovary and tube.	Yes. Stitch abscess. Recovered.	Sac filled pelvis and nearly the umbilicus; was at every point adherent to uterus, intestines, or abdominal wall; was enucleated by the hands rather than the knife. Drainage tube used twenty-four hours. Her recovery is to be regarded as phenomenal.
32. W. M. 37. Oct. 29th, 1891.	Married. Three.	Fibro-cystic tumor of uterus.	Abdominal hysterectomy.	No. Died.	Tumor began to show five years ago. Since then has been suffering profuse hemorrhages. Was supposed to be an ovarian tumor. Got through operation well. The stump secured by the Baker Brown clamp. No bleeding. About the fifth day temperature up to 103°; pulse 150. Death took place on the seventh day from peritonitis.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.¹

FOURTH ANNUAL MEETING.

HELD AT RICHMOND, VIRGINIA, NOVEMBER 10TH, 11TH,
AND 12TH, 1891.

DR. LEWIS S. MCMURTRY, of *Louisville*, *President*.

ALBUMINURIA: ITS RELATION TO SURGICAL OPERATIONS.

DR. J. W. LONG, of Randleman, N. C., read the first paper, which was of interest to gynecologists as well as to general surgeons. The author's conclusions were: (1) That ether and chloroform rarely injure healthy kidneys; (2) when renal disturbance does occur, the kidneys having previously been perfectly healthy, it is due to the prolonged narcosis and exposure of the patient, or perhaps to the combined influence of the operation and anesthetic; (3) a mild degree of albuminuria or nephritis is not a contra-indication to the use of chloroform or ether; (4) even in the presence of advanced renal changes an anesthetic may be administered, provided the family are advised of the additional risk; (5) of the two anesthetics it is generally believed that ether is the safest, unless it be in obstetric operations; (6) that a kidney lesion and albuminuria may be produced by an operation, apart from the influence of the antiseptic; (7) that such influence is supposed to be reflex; (8) that abdominal, vaginal, and rectal operations are especially liable to produce renal complications; (9) that a healthy condition of the kidneys minimizes but does not obviate the dangers referred to; (10) that albuminuria is always indicative of a renal lesion, and should be regarded with anxiety, but is not a positive contra-indication to an operation; (11) that when albuminuria is associated with other evidence of advanced renal changes, no operation should be undertaken without stating to the patient and friends the dangers incident to the condition; (12) that occasionally albuminuria is caused to disappear by an operation.

¹ Only papers relating to gynecological subjects are included in this abstract.

The author did not wish to underrate the dangers of an operation or overrate the dangers of albuminuria. He hoped the subject would be thoroughly discussed.

DR. W. W. POTTER, of Buffalo, opened the discussion, and said that he had used both ether and chloroform, and had reached the opinion that in healthy subjects the surgeon might feel safe in the use of chloroform. He had administered this agent about three thousand times, and had seen no death from it. It was important to have an expert administer the anesthetic, and to have definite knowledge of the condition of the kidneys.

DR. BAXTER, of Chattanooga, had repeatedly seen albuminuria follow shock after injuries where no anesthetic had been given, and he was disposed to attribute the albuminuria following operations to the shock rather than to the direct influence of the anesthetic.

DR. J. D. S. DAVIS thought that where albuminuria existed it often pointed to a condition of the kidney which was due to the diseased state for which a surgical operation was demanded, and that surgical treatment would relieve rather than enhance the renal complication. In bladder affections, for instance, he never hesitated to operate, whatever might be revealed by a urinary analysis. In general, he preferred chloroform to ether.

DR. HUNTER McGUIRE said that even without the use of an anesthetic albuminuria followed operations in a large number of cases. His preference was for chloroform, which he had administered as many as twelve thousand times, yet he did not think any man should select this agent to the entire exclusion of ether. He put no confidence in statistics showing that in a given number of cases ether had caused death much less frequently than chloroform.

DR. WESTMORELAND, of Atlanta, attached no importance to albumin in the urine, unless further examination revealed renal casts. Nor did he believe that slight changes in the kidney, as swelling, found post mortem, necessarily indicated disease during life. Like others who discussed the paper, he attached a great deal of importance to the manner in which the anesthetic was administered, and said that one accustomed to giving either ether or chloroform would, on changing to the other, be likely to administer it in a less skilful manner, and therefore be more likely to have an accident.

DR. C. KOLLOCK, of Cheraw, S. C., agreed with Dr. McGuire that one should not be dogmatic in his choice of an anesthetic. Personally, however, he usually employed chloroform, and had never had a death caused by it; whereas in giving ether about two hundred times, two deaths had occurred.

Before giving chloroform he administered brandy well diluted with water, which was slowly absorbed by the stomach and kept up the action of the heart.

DR. JOSEPH PRICE, of Philadelphia, was also in accord with the views of Dr. McGuire. The trouble heretofore had been that, when an accident occurred with chloroform in this country, the surgeon was not sustained by his professional brethren, whereas when ether was given no criticisms were offered. It required an experienced man to administer an anesthetic properly. It was often difficult to say whether in a given case the patient died from the operation or from the anesthetic. He believed that if some of those present, in perfect health, were placed upon a table and forcibly compelled to inhale ether for an hour or an hour and a half, they would die, although no operation were performed. Some patients died of what might be called chronic surgery—of an operation lasting an hour or an hour and a half.

DR. ALBERT VANDER VEER, of Albany, thought that usually, where death took place after the use of ether or chloroform, some pathological condition would be found to account for it. While he had seen death from chloroform, he had seen none from ether. He used chloroform on children, and believed that in all cases where there was renal disease it was safest. He preceded its use by a hypodermic injection of $\frac{1}{150}$ grain of atropia and $\frac{1}{6}$ grain of morphine.

DR. H. P. C. WILSON, of Baltimore, had been using chloroform over forty years, had administered it at least fifteen thousand times, and had never seen a death. There was a tendency in this country to regard death following ether as all right, but following chloroform as all wrong.

After some further discussion DR. LONG closed. He thought it possible that a functional albuminuria might exist a little while, due to a functional disturbance; but if such functional disturbance continued it would lead to an organic lesion of the kidney.

SYSTEMIC INFECTION FROM GONORRHEA.

DR. BEDFORD BROWN, of Alexandria, Va., related five cases which had come under his care of systemic infection from gonorrhea. They illustrated, he said, two types of the systemic disease—in one the infective element travelling along the epithelial surfaces, in the other invading the lymphatics. The former was more likely to set up suppurative action than the latter. In the male the gonorrheal microbe was likely to terminate its travels before reaching the bladder or even the prostate; but sometimes, as in instances which he related, it followed up the ureters into the kidneys, causing one or both of these organs to break down into an abscess.

DR. ROBERT T. MORRIS, of New York, agreed with the author that systemic infection from gonorrhea had received too little attention. He did not suppose that the suppurative and embolic processes were due directly to Neiser's gonococcus, but that this paved the way for other micrococci which were the cause of suppurative action. He referred to the treatment of this and other kinds of bladder affections by the introduction of peroxide of hydrogen.

The further discussion of the paper became more gynecological. DR. JOSEPH PRICE, of Philadelphia, agreed with the author that gonorrhea was a more serious disease than the laity and the profession seemed to regard it. It was less important to confine a murderer than a man with gonorrhea or syphilis. He could recall three deaths from gonorrhea in medical students. This affection was too much neglected by physicians, the fault being largely due, perhaps, to the fact that the patient's shame or poverty drove him to the drug store. Some years ago he had asked permission at the City Dispensary, Philadelphia, where gonorrheal cases were not received, to see this class of patients after the usual dispensary hours, and he then became acquainted with the great prevalence of the disease. Indeed, he was obliged to quit taking meals at hotels and restaurants because so constantly saluted by gonorrheal patients. In after-years he had operated on as many as one hundred women, wives of men whom he had formerly treated for gonorrhea.

DR. JOSEPH PRICE, of Philadelphia, read a paper on

COMPLICATIONS IN PELVIC SURGERY, AND HOW TO DEAL WITH THEM.¹

DR. THOMAS OPIE, of Baltimore, was disposed to think the drainage tube would not be required where the operation was performed aseptically. He also expressed the opinion that damage had sometimes been done the peritoneum by flushing with water.

DR. H. O. MARCY, of Boston, emphasized the importance, in laparotomy cases, of strict attention to all bleeding points. With regard to the drainage tube, he used it for a certain purpose, namely, to guard against infection, and not simply to eliminate fluids. The peritoneum would digest and dispose of a great many things, but it was not desirable to feed it germs which he had learned would cause suppuration.

DR. DEAN, of South Carolina, agreed with what had been said regarding the danger of puncturing cysts, etc., for diagnostic purposes. In a case in which he found dense adhesions he first attempted to withdraw the fluid from a cyst, and

¹ See original article, page 1409.

found that the point of the trocar penetrated a vessel and caused considerable hemorrhage, requiring a ligature before the operation could be continued.

DR. C. KOLLOCK had been impressed by the author's statement that he had seen pus in the pelvis when there was no cellulitis whatever. He believed he had seen the same thing himself, but so many were sceptical that he had hesitated to announce his belief. Since Dr. Price had spoken, he felt convinced that he was right.

DR. VANDER VEER thought it was practical to make a distinction, as the author had done, between abdominal and pelvic surgery. He hoped the time would soon come when physicians elsewhere would recognize extra-uterine pregnancy as early as it was being recognized at present in Philadelphia. When that time should come, many lives would be saved which were at present lost.

He thought that where the drainage tube was used it proved valuable, not alone in removing septic fluid, but also in giving warning of any danger which might call for reopening the abdomen. He had never been favorably impressed with the use of the syringe for getting out the fluid; he preferred to insert a piece of gauze through the tube, which could be renewed as often as one thought proper.

Care should be taken at the completion of the operation to replace the intestines and their covering in the normal position. Neglect to do this would favor adhesions.

DR. MICHAEL, of Baltimore, spoke favorably of the action of hot water, to which reference had been made in the paper. The drainage tube should be used only for positive indications.

DR. PRICE, in closing the discussion, said that perhaps in not more than one case out of five hundred would he now be compelled to abandon an operation on account of the density of the adhesions.

DR. THOMAS OPIE, of Baltimore, described

THIRTY-TWO LAPARATOMIES PERFORMED DURING THE PAST YEAR at the Baltimore City Hospital.¹

DR. JOSEPH TABER JOHNSON, of Washington, thought well of reporting all of one's cases during the year, yet this method would not enable us to judge of the ultimate result of the operation. He believed much good might come from resorting more frequently to exploratory laparotomy. He would not call it an incomplete operation. He differed with the author in regard to drainage, and agreed with Mr. Tait in the statement: When in doubt, drain. He did not take much

¹ See original article, page 1441.

interest in the cry against unsexing the woman, for she was unsexed before the operation was undertaken. As to flushing the cavity, he thought a woman ran less risk from this treatment after bursting of an abscess than from wiping out the cavity.

DR. W. E. B. DAVIS thought that those who opposed the use of the drainage tube did so probably because their success with it was not as great as that of surgeons who had acquired skill in its management by frequent use. The damage attributed to it was largely due to its abuse. He would remove it in from twelve to fourteen hours. A peritoneum properly drained would dispose of a larger number of germs than one hermetically sealed but containing clots or fluids. He did not believe that where the entire peritoneum was involved in suppurative peritonitis a cure had ever resulted. He thought we had no more right to remove normal ovaries for nervous disease than to remove the testicles for the same condition.

DR. H. P. C. WILSON, of Baltimore, thought we could learn much more by our failures than by our successes. He had never had a failure from which he had not learned something, but had had many successes from which he had learned nothing. He also agreed with Mr. Tait—when in doubt, drain. Take out the drainage tube as soon as possible. He had never seen a pyo-salpinx which he could trace to gonorrhea, and he had cured many women of gonorrhea, contracted from their husbands, without pyo-salpinx following.

Regarding removal of the uterine appendages in cases of mania, he had operated in four or five such cases, in all obtaining a most gratifying result. Most of them had been in an asylum for the insane, yet all were well to-day. In such cases the patient's relatives were liable to pronounce the operation a failure and send her back to the asylum before giving time for mental improvement to take place. In one or two of his cases two or three months passed before the mind became normal. The speaker preferred flushing the abdomen to sponging it when fluids had escaped.

DR. JOSEPH PRICE thought the opinion of those working in laboratories, regarding the best antiseptic, too changeable to afford a working basis in surgery. Regarding exploratory incisions, the wider our experience the fewer were these operations. Concerning fixation of the uterus, he had at one time given a good deal of thought to that subject, and the first operation performed in Philadelphia for this purpose had been made at his suggestion. Now, however, he was convinced that the uterus could not be fixed as one would hitch a horse, and he had often found it necessary to loosen the organ after ventral fixation by some laparatomist. Stitch abscess should never

occur where proper suture material was used; as silk which was neither too large nor too fine, not drawn too tight, and applied aseptically. Irrigation was much more valuable and less liable to do injury than gauze or other sponges. Hot water not only cleansed the abdomen but prevented shock. He remarked upon the advantages of drainage in certain cases. He was glad to hear Dr. Wilson's experience with neurotic cases. He had himself operated in a number of cases where girls or women would sit vacantly in a corner all day, would take no interest in their plants, friends, or anything else, who would suffer from convulsions at the menstrual periods, etc., and after removal of the uterine appendages they would become happy and healthy. Removal of the appendages had not, in his experience, altered the voice, had not made the women homely, had not given them a moustache, etc. The speaker said it would be impossible and uninteresting to relate all his laparatomies for a year, but he did narrate three fatal cases.

DR. OPIE, in closing the discussion, said he thought Dr. Price succeeded where he drained when one less experienced would lose his patients. He also believed that Dr. Price might in five years change his mind regarding the necessity for drainage, and discard it where now he often made use of it.

OBSCURE ORIGIN OF OVARIAN CYSTS.

DR. C. KOLLOCK, of Cheraw, South Carolina, read a paper in which he referred to the obscure origin of ovarian cystomata, expressed the opinion that the causes to which they had been attributed by different authors were not the real ones, and related three cases in which an hereditary degenerative tendency, menstrual abnormalities, ungratified sexual desire, etc., could have had no influence. One of the cases was that of a girl who had a tumor of considerable size in both ovaries at the age of 11, and was operated upon at about the twelfth year. She was as large and as well developed as a woman, menstruated when 10 or 11 years old, was healthy except for this tumor. She recovered.

DR. W. W. POTTER, of Buffalo, read a paper on

A MEDICO-LEGAL ASPECT TO PELVIC INFLAMMATION.¹

DR. C. A. L. REED, of Cincinnati, thought the author of the paper had brought before the Association a very important subject. The question of diagnosis would prove a stumbling block in the way of settlement of the class of cases under consideration, and would usually furnish a loophole through

¹ See original paper, page 1427.

which recalcitrant attending physicians might safely escape. He read a newspaper extract relating the history of a case in which a woman was said by the many physicians who saw her to have this, that, and the other trouble, which she claimed was due to an injury on a railroad. She brought suit against the company, but before it had been tried she was operated upon and a fetus of thirteen months was found in the abdominal cavity.

DR. G. J. ENGELMANN, of St. Louis, referred to the case of a girl in St. Louis who was supposed by prominent surgeons to have hip-joint disease, until an examination was made under an anesthetic, whereupon the real trouble was found connected with the uterus and appendages, the hip-joint symptoms being only reflex. It was well known that women sometimes visited their physician for years to be treated for a gastric symptom which by accident, perhaps, was found to be due to a pelvic disease and disappeared with treatment of the latter. Nothing but a careful examination of all the organs would enable us to establish a positive diagnosis in many cases—a fact which constituted a potent argument against too close confinement of specialism. Only the specialist who was also a general physician would recognize these various conditions.

DR. HOWARD A. KELLY, of Baltimore, thought that until the medical schools should establish long courses it would be unfair to blame men for failing to make a correct diagnosis. Hip-joint disease was often simulated in women with pelvic affections. He had made something of a study of the gait of women having pelvic trouble, and it was quite commonly of a nature to suggest joint trouble, the patient holding the body in a way to avoid jar and pain.

DR. WESTMORELAND thought that in doubtful cases the general surgeon should call in some one who made a specialty of pelvic diseases, in order to make sure of his diagnosis. He also said that it was natural for patients to refer their symptoms back to some accident which may have had no etiological relation, and, encouraged by a designing lawyer, bring suit against the railroad or other company when there was no just cause. It was rather natural, too, for the physician to look upon the case according as he was called by the plaintiff or defendant.

DR. JOSEPH PRICE thought the error on the part of the general surgeon was sometimes due to his dislike to make a rectal or vaginal examination through fear of dirtying his hands. He had known women to carry a jury-mast and all sorts of apparatus for supposed vertebral disease, when later a pelvic operation gave entire relief. He also suggested that the general practitioner, on deciding to call a specialist in

consultation, ought to keep his hands off the patient until the consultation was held, instead of giving opium or otherwise obscuring the symptoms by treatment.

DR. STONE, of Washington, related a case showing that it was sometimes impossible for the physician to make a positive diagnosis between pelvic and joint trouble at a given stage of the case; and if during that time the case were brought into court, there would likely be conflicting testimony, according to whether the doctor were called by the defendant or plaintiff.

MEDICO-LEGAL ASPECT OF INTESTINAL SURGERY.

DR. J. D. S. DAVIS, of Birmingham, Alabama, read a paper with this title. It was chiefly of interest to the general surgeon dealing with intestinal wounds. He impressed the necessity for experimental skill before undertaking to do operations on the intestines in the human being.

In general, those who discussed this paper were of the opinion that in gunshot and other wounds of the abdomen and intestine an early operation should be resorted to if one would save life. To wait at all would be to encourage septic peritonitis and death.

ETHER ANESTHESIA.

DR. JOHN A. WYETH, of New York, made some remarks upon this subject and exhibited the Ormsby inhaler. The success of modern surgery depended largely upon the safety of the anesthetic. Not until about a year ago had he learned how best to administer ether. By means of the apparatus presented, which he became acquainted with in Europe, one could give a minimum quantity of the ether and obtain the maximum effect. This avoided the saturation of the system with the anesthetic, lessened the danger to the kidneys, respiratory organs, etc., and, inasmuch as the patient re-inhaled his own breath mixed with the ether, it was warm, and had not that chilling effect which was observed where the vapor was mixed at each inhalation with fresh air. The carbonic acid also had a benumbing effect on the nerve centres, making it unnecessary to give so much ether. The patient came from under the influence soon after the inhalations were stopped, and was less likely to have nausea and vomit.

DR. HOWARD A. KELLY, of Baltimore, read a paper on

HAND DISINFECTION.¹

¹ See original article, page 1414.

DR. I. S. STONE, of Washington, read a paper on

THE PEDICLE IN HYSTERECTOMY: HOW FORMED; ITS SUBSEQUENT BEHAVIOR; ITS FINAL CONDITION.¹

DR. ROSS, of Toronto, related a case in which he performed the operation as had been recommended by Dr. Eastman, of Cincinnati, with a slight modification, and had found it very satisfactory. It was performed in Trendelenburg's posture; it enabled one to do away with the clamp; it did not endanger the uterus. The extraperitoneal method of treating the stump caused the surgeon too much anxiety.

DR. ROBERT T. MORRIS, of New York, said he had operated in only six or seven cases, but his experience in these led him to ask the question, Of what use is a pedicle? Why have one at all?

DR. H. O. MARCY thought that Eastman's method was a great advance over the extraperitoneal, but he thought a still further advance was made by leaving a portion of the cervical tissue and tucking the peritoneum down on either side, covering over the wound and sutures, no drainage being required.

DR. JOSEPH PRICE was unwilling to give up the extraperitoneal method so long as that by dropping the pedicle was attended by a considerably greater mortality. He explained the steps which he had taken in the treatment of cases where the pedicle was as thick as one's thigh, how gradually he stripped it down until it reached the size of one's wrist, etc. He felt that a woman should never die from supravaginal hysterectomy for a healthy fibroid, if she were sound in other respects. These cases did better, in his experience, than ordinary ovariectomy cases.

By applying pressure forceps here and there as landmarks, one was enabled to work rapidly without making any mistakes while reducing the pedicle. The pins should be placed before cutting the tumor away. He lost two of his first eight cases, and then had a run of forty-three without a death. In one of the cases the ureters were at least ten inches above their normal position, and were divided; but by resorting, in the course of a year, to several operative procedures, this woman finally recovered. Out of a total of sixty-nine cases he had had four deaths, only one of which could fairly be attributed to bad surgery.

DR. STONE, in closing the discussion, expressed the belief that Dr. Price would in time find another method better and more successful than the one which he now practised with so low a mortality.

¹ See original article, page 1432.

The President's Annual Address.

DR. L. S. McMURTRY, of Louisville, in his address, thanked the Association for the honor conferred upon him in calling him to the responsible position of President. He then devoted his paper to a plea for progressive surgery.

He desired to direct the attention of the members to an abuse of terms by which great improvements in their work were obstructed and injustice done both to surgery and surgeons.

Webster, he said, defined the word "conservative" as having power to preserve in a safe or entire state, or from loss, waste, or injury. This term was conspicuous in surgery, and had been used to indicate and classify certain surgical procedures known as conservative surgery. But of late this term had been made to have a very wide and altogether arbitrary significance, and was often used in antithesis to *progressive* surgery. Indeed, it had come to be used by certain surgical writers and speakers as synonymous with the word "expectant," to mark methods wherein Nature was left unaided in her efforts to resist disease and injury. The word was very winning to the popular professional mind, as well as to the laity, and in its perverted sense was misleading and deceptive. We should enter a protest against the perversion of the word *conservatism* when it was used to oppose and retard *progress* in surgery, the supreme purpose and object of which was "to preserve in a safe or entire state, or from loss, waste, or injury."

Not many years had elapsed since it was the established usage of surgeons to defer operation in cases of ovarian cystoma until the patient's general health was impaired and she was reduced to emaciation. This was pronounced *conservative*. When, under the leadership of Bantock, it was urged that the time for ovariectomy was as soon as the tumor was discovered, before complications arose and before the health was impaired, it was regarded as an expression of "the modern craze for operative interference." With the mortality of the two courses before us, which, he would ask, is *conservative*?

There were certain abnormal conditions of various organs and structures in which the individual could only be rescued from impending death by prompt surgical aid. Such, for example, was a ruptured tubal pregnancy. Here delay and opium and palliatives had been advocated under the misleading plea of conservatism. Was it not the part of conservative surgery to tie the bleeding vessels and remove the disintegrated embryonic structures? In other conditions wherein safety lay only in surgical interference, it was claimed that

surgical aid should be invoked only after a prolonged treatment by palliative measures, when the medical attendant had been convinced that he was leading a forlorn hope, and that relief would come, provided it came at all, from operative treatment. This course, whereby operations were performed upon dying patients, was commonly called conservatism!

One of the great advances of modern times was in the knowledge we had acquired of the inflammatory diseases of the uterine appendages. Almost thirty years ago two able French surgeons discovered and described these lesions and their deadly effects, but the profession did not heed them. When modern surgery opened the peritoneum to frequent exploration, the truth and importance of the researches of Bernutz and Goupil were realized and accepted.

A large proportion of the Fellows of this Association devoted themselves exclusively to gynecology and pelvic surgery. These gentlemen were constantly removing suppurating masses (pyo-salpinx and ovarian abscess) from the pelvis. All of us had seen women dragging out a miserable existence with chronic inflammatory disease of the uterine appendages and associated recurrent attacks of peritonitis. We had also seen these women restored to health and activity, after years of invalidism, by removal of the diseased and disintegrated structures. Moreover, we all knew that throughout this broad land every year women perished of this condition of disease for want of operative treatment, and that no other treatment known would cure this class of patients. Yet, under a plea of conservatism, we had heard this great advance in pelvic surgery, this brilliant improvement in our resources for saving life and restoring health, denounced from the rostrum and ridiculed in the medical press. To allude flippantly to the "castration of women," to "removal of the ovaries," "spaying," etc., was to convey a wrong idea of a great advance in pelvic surgery by which hundreds and thousands of lives were saved, and was as erroneous as it was unjust. He wished to record here that no gynecologist, so far as he was aware, advocated or approved the removal of ovaries and tubes except for lesions which destroyed the health and usefulness of the individual, impaired and destroyed the functions, and which were incurable by non-operative treatment. He would not be understood for one moment to declare that operations for removal of the uterine appendages had not been done unnecessarily. On the contrary, this operation, like many others, had been abused in many quarters. But we must protest against the wholesale condemnation of a great life-saving procedure and a large and respectable body of earnest practitioners on account of the recklessness of others.

Fortunately for science and humanity, no amount of misrepresentation and unjust criticism could permanently obscure the truth or obstruct the progress of science. Every great improvement in surgery must pass through the fierce ordeal of criticism before emerging into the fixed position of established acceptance. It had been our lot to see during the past decade the greatest achievements of modern times in surgery firmly established despite the fierce criticism and misrepresentations of men and methods. The progress of surgery, like that of all sciences, was an earnest and persistent search for truth.

Surgery was advanced more by the aggressiveness of the surgeon than by timidity. In the face of desperate conditions of disease and injury, where there could be no safety whatever in delay and palliation, the only treatment worthy of consideration was the aggressive course which promised success. Under such conditions the most heroic surgery was conservative, and any other course was not conservative.

Those members of our profession who were not familiar with operative-work, or who did surgery as a last resort or under protest, were disposed to oppose surgical treatment. They looked upon surgery as dangerous, only to be resorted to as a last desperate chance. And they were right to this extent only: it was dangerous when utilized as a last resort, not otherwise.

INJURIES TO THE PELVIC FLOOR AND THE METHOD OF REPAIRING THEM.

DR. THOMAS ADDIS EMMET, of New York, read a paper with this title. The author thought that he could claim some credit for perfecting an operation for the repair of the injured perineum and not show egotism. He was the first, twenty-five years ago, to deviate from the method of Baker Brown of simply uniting the labia. He held that any operative procedure devised for the repair of the pelvic floor or vaginal outlet which included a portion of the posterior wall of the vagina, whereby it was lifted forward, was but a modification of his own operation.

Unfortunately, he said, the subject was one which presented almost insurmountable difficulties in the way of clear description, but he would be glad to show the method to the members individually who might be present at his operation at the Woman's Hospital.

The term laceration of the perineum was a misnomer, and if used at all it should only be used where the sphincter ani was involved. We had been misled by the term perineal body, for no such body existed save as an imaginary one. It

could not, if it existed, give support to the vagina or uterus. It could be clearly demonstrated that the uterus was supported and swung from above, as was every other organ in the body, and, with the vagina and rectum, was kept in position by the connective tissue and fascia of the pelvis. This fascia was in close connection with the cellular and connective tissue of the pelvis, and was attached alongside the vagina and rectum so as to prevent undue prolapsus of the bowel from the sigmoid curve to the anus. While giving support to the vagina, it exerted lateral traction, with the effect of preserving its natural curve and keeping the two sides in close contact so long as the fascial attachments preserved their integrity.

The grooves or sulci formed by the flattened two sides of the vagina were strictly the result of lifting the posterior wall up to the anterior one, while at the same time the needed degree of lateral traction was exerted by the fascia. If we were to trace the course of the fascia forming the sulci from the starting point at the superior strait and alongside the vagina to the point where the canal pierced the muscular diaphragm at the pelvic outlet, it would be seen to be reflected on these muscles. This fascia, as a continuation of that in the pelvis, bound the whole muscular mass in a common sheath, strengthened it, and only so long as its integrity was preserved did the circulation in the pelvis remain in normal equilibrium. When the fascia gave way the vessels lost their support, no longer continued in a tortuous route, became engorged, and gave rise to the symptoms well known to accompany neglected cases of laceration.

The action of the pelvic fascia was one of compensation, so that if it became relaxed in one direction it must become lengthened in another. During the progress of labor the vagina became shortened in proportion as the transverse diameter was increased.

The author then described what took place in laceration during labor, in the course of his remarks referring to the action of the sphincter and perineal muscles. On the outer side of each levator ani muscle, and extending along its attachment, the transverse perinei were inserted and extended backward to the tubera ischii. Under ordinary circumstances their action would bind more firmly together the muscular floor of the pelvis, but as soon as the levator ani muscles separated in front the transverse perinei could only draw the levator ani more apart, as curtains might be drawn apart below while united above.

A laceration in the median line of the vagina not extending to the sphincter ani was of little consequence. The perineum was not there lacerated. But in injuries to the pelvic floor a

force came into play by which the levator ani muscles in front were widely separated; and this occurred often where there was not the slightest injury to the mucous membrane of the vagina or skin outside. Consistent with his belief as to the pathology of the condition, he said he had gradually perfected an operation whose object was to catch up the retracted fascia at a point and in such a manner that he could take in the slack, as it were, of the fascia throughout the pelvis. By this procedure the posterior wall of the vagina was lifted up and drawn forward in contact with the vesico-vaginal septum, the everted tissues at the vaginal outlet rolled in, and he apparently brought together the separated levator ani muscles. The woman so treated became in every respect natural, and he attributed this result to giving support to the blood vessels and restoring a normal circulation in the pelvis. Sexual intercourse, from having been repugnant, became a pleasure.

A woman who had sustained an injury of the extent under consideration must certainly receive some treatment preparatory to sewing up the perineum. The cervix should be repaired and the uterus replaced, and subsequently an operation on the anterior wall of the vagina might be necessary. They could not all be done at once.

The first step in repair of the injured floor was to determine, within a reasonable degree, the amount of retraction which had taken place in the fascia along the sulcus on each side of the vagina. It would of course be a futile effort to seek to determine this by the extent of the scar line in the vagina. With the patient on her back, the limbs flexed, find a point in the middle of the projecting mass within the vagina, pick it up with the tenaculum, draw it forward and upward toward the neck of the bladder, and two folds would be formed leading upward to a fixed point within the sulcus on each side, these points indicating the limit of retraction and showing clearly that the portion of the vagina above was still properly supported. Bear in mind that this triangular-shaped tongue or portion of the rectocele which was drawn forward with the tenaculum would form after the operation the posterior wall of the vagina; that all below the point of the tenaculum was to be turned in. With the parts in this position after the denudation and insertion of the sutures, the rectocele would have been disposed of, the two walls of the vagina would lie in contact, the axis of the canal would have been changed so as to present the normal concavity with the requisite degree of support. A further step, however, was taken in order to bring nearer together the separated levator ani muscles.

After the rectocele has been drawn down toward the neck

of the bladder, replace the tenaculum by a strong thread, to constitute a landmark and to be held by an assistant. Then find the carunculi or remains of the hymen on each side, indicating the limits of the vagina, hook in a tenaculum, and let two assistants make traction to either side. A triangular, deep, gutter-shaped surface would be thus formed on the right and left of the canal, with the apex of each running into the lateral sulcus above. Then, drawing down on a third tenaculum hooked into the posterior vaginal wall, one would see clearly mapped out the full extent of the surface on each side which it was desired to denude and unite. Interrupted sutures were employed, and he preferred silver wire. He first introduced a suture in the apex of each triangle above, then put them in, one after another, about a quarter of an inch apart, until the neighborhood of the loop in the centre of the rectocele was reached, approximating the carunculi on the sides. It was well to secure the sutures on each side by a separate pair of forceps in order to avoid mixing them. The next step was to introduce sutures so as to close the sides of the vaginal outlet and bring together at the same time the separated levator ani muscle. This crown suture, as it had been termed, was passed close to the caruncle on the right side, dipped into the denudation in the rectocele, and came out through the denudation on the vaginal wall about half an inch behind the caruncle on the opposite side, at a place corresponding to the point of entrance on the right side. As the parts were drawn together by this suture, one got for the first time a clear impression of what was going to be accomplished by the operation. Three or four more sutures were to be introduced in the same manner as the last one, in the same direction, one below the other; and as they were introduced the parts rolled in more and more until the sutures were lost to sight between the folds of the labia. In twisting the sutures, begin with them in the order of their insertion. When the sutures had all been secured there should be no gaping of the vagina. The external appearance was that of a woman who had never borne children. When the operation was properly performed, the elasticity of the parts was restored fully. While rather tedious, yet it was a simple operation, and the only one which would stand the test of subsequent labors.

DR. PRICE and DR. KELLY were accustomed to doing the same operation as Dr. Emmet, whom they had seen operate, but made unimportant modifications. DR. MARCY described his method of operating, and DR. BUCKMASTER made some remarks explaining in part the greater frequency of rupture on the left side by the deviation of the rectum.

DR. JOSEPH TABER JOHNSON, of Washington, then read a paper entitled

THE GROWTH OF FIBROID TUMORS OF THE UTERUS AFTER THE MENOPAUSE.¹

DR. JOSEPH PRICE thought that gynecologists were sometimes equally guilty with general practitioners in neglecting their duty by cases with fibroid tumors of the uterus. He would not hesitate to urge removal of the appendages in all cases of small fibroids. To do so would save many a Porro operation or hysterectomy. Retrograde changes or cystic degeneration were quite common after the menopause; nor was the rapid growth of the tumor after this period uncommon. It was in neglected cases that serious risks often attended radical treatment.

DR. C. A. L. REED, of Cincinnati, read a paper on

THE SURGICAL TREATMENT OF ANTERIOR DISPLACEMENT OF THE UTERUS.²

DR. W. D. HAGGARD, of Nashville, read a paper entitled

THE PART THE SHOULDERS PLAY IN PRODUCING LACERATION OF THE PERINEUM, WITH SUGGESTIONS FOR ITS PREVENTION.

He thought authors had attached too much importance to the part played by the head and not enough to that taken by the shoulders in the production of lacerations of the perineum. His attention was first called to this subject by witnessing a case in which there was only an unimportant tear when the head had passed, but which became extensive, reaching into the sphincter, on the passage of the shoulders. For some time, when this accident repeated itself, he was inclined to comfort himself with the thought that it was unavoidable, being due to the disproportion between the size of the head and shoulders and the outlet. Afterward he became convinced that in most cases the accident was avoidable. To support the perineum favored rather than tended to prevent rupture by the head and shoulders. The head being round, and its passage taking place more slowly than that of the shoulders, it was less likely, the author thought, to cause rupture than were the shoulders themselves. After the exit of the head the perineum contracted around the neck; the uterus was prepared, after its brief rest, to contract vigorously and expel the shoulders with rapidity; and the latter, being of

¹ See original article, page 1420.

² This paper was received too late for this issue. It will appear in the number for January, 1892.

irregular shape, and perhaps not having time to rotate into the longer diameter of the canal, were liable to cause rupture, especially where a nick had been started by the head. In spite of these facts, Lusk had suggested that the action of the uterus at this stage might be aided by one hand placed over the abdomen, when, as a matter of fact, there was already danger of the parts being forced through too rapidly and thereby producing rupture. The case at this stage could not be properly managed with the patient in the dorsal position. In fact, he thought the choice of position during at least the second stage was no longer debatable. The patient should occupy the left lateral decubitus. Giving his further conclusions, he added: (1) Overcome rigidity of the vulval outlet by the judicious use of chloroform, if necessary; (2) the presenting part of the child should be supported, not the perineum, during the passage of the head and shoulders; (3) support by pressing well up under the symphysis pubis by placing the right thumb in the rectum and the fingers of the right hand expanded over the occiput; (4) to retard the exit of the shoulders, pressure should be applied to the trunk and shoulder by placing the index and middle fingers of the left hand in the rectum, the thumb on the parts in the vagina, the right hand supporting the head and neck.

DR. BEDFORD BROWN had noticed in several cases that the passage of the shoulders had much enlarged a tear started by the head, but when the head passed safely the shoulders were also almost sure to pass safely. He had for a number of years tried the various plans which were suggested from time to time for prevention of rupture, including support of the perineum but all without any advantage. The last few years he had tried another method, consisting in gradually distending the perineum by pulling backward with the fingers in the vagina, the patient being under the influence of chloroform. He did not think laceration would ever take place in ordinary labor where the perineum was well distended.

DR. W. E. B. DAVIS thought chloroform should be given at the second stage in all cases, and DR. ENGELMANN thought we should do away with the term "supporting" the perineum. It was the protection of the perineum which we should attempt.

CYST OF THE MESENTERY.

DR. J. A. GOGGANS, of Alexander City, Alabama, described a case of cyst of the mesentery in which, with the aid of Dr. W. E. B. Davis, he performed abdominal section, found that the cyst could not be enucleated owing to its seat in the mesentery, strong adhesions, and free blood supply, and

therefore evacuated the contents, fixed the cyst in the abdominal wound, and drained. Hot-water injections through the tube were practised every four hours for some days, and the tube was gradually removed. The patient made a good recovery. She had previously been seen by several physicians, was treated for dropsy, etc. Of course the exact nature of the cyst could not be made out until the abdomen was opened, although its contents had been determined by aspiration. The author referred to the rarity of cysts and tumors of the mesentery, and to the fact that usually where patients had been operated upon the result had been fatal.

THINNESS OF UTERINE WALLS SIMULATING EXTRA-UTERINE PREGNANCY.

DR. GEORGE J. ENGELMANN, of St. Louis, described two cases of thinness of the uterine walls in normal pregnancy leading to a diagnosis of extra-uterine pregnancy. The first patient had had three children in rapid succession, had not menstruated since the birth of the last one, which was twenty months old and still nursing. She visited the clinic complaining of something coming down, of swelling and pain in the right groin. The swelling had made its appearance rather suddenly three weeks before. There was a sense of fullness after meals, and vomiting spells. Examination revealed a movable tumor in one groin; the flexible applicator entered slightly anteriorly into the uterus a distance of three inches. It had no apparent connection with the tumor in the abdomen. The diagnosis was of a tumor either superimposed upon the uterus or possibly of the anterior wall. It was seemingly a round, solid, hard tumor, nothing at all like a pregnant uterus. The treatment was expectant, although astringent applications were made within the uterus. At the next examination the tumor would appear and disappear, but the change was not at all suggestive of contraction of a pregnant uterus. It seemed like a solid mass which was felt under the hand, disappeared, then re-formed. Very soon the solid mass disappeared entirely. When the patient returned, after a considerable interval, they could distinctly feel the parts of the child where formerly they had felt the tumor. The parts could also be very clearly mapped out by palpation through the vaginal walls. Supposing the pregnancy was extra-uterine, the patient was told to report in case of the least disturbance. The applicator gradually penetrated further, but never in the direction in which the child could be so easily felt. They had no reason to believe the applications had been made into the pregnant uterus. The diagnosis was cleared up by the patient miscarrying about the fifth

month. The other case was somewhat similar. The uterine walls were very thin, the flexible instrument was introduced several times the full depth of the uterus, but a correct diagnosis was reached and the child was carried to full term.

DR. McMurtry referred to some cases illustrating the difficulty of diagnosis, in one the patient having a fibroid for a long time, having never borne a child, having reached nearly the menopause, yet she became pregnant, and it was with great difficulty that he could convince the several physicians who saw her that pregnancy existed.

DR. Ross, of Toronto, did not think that thinness of the uterine walls simulated extra-uterine pregnancy. On the contrary, where the sac containing the fetus was very thin he would suspect it was not extra-uterine, and would wait.

Some of the speakers doubted the propriety of using the sound, believing that it was worthless as a means of diagnosis, and, of course, liable to do mischief.

OPOSSUM TENDON.

DR. H. O. MARCY, of Boston, presented an opossum in order to show the long, slender tendons in the tail, which he thought would be a very desirable substitute in the South for the kangaroo tendon which he had for some years used instead of catgut, and to some extent had introduced in the North. The opossum being a native of Virginia and the South, surgeons in that section might be able to obtain suture material from the tendons in the tail of this animal when they were unable to obtain kangaroo tendon. Dr. Marcy also spoke of the advantages of such tendon over catgut. When buried it became a part of the living structures, and was stronger and less likely to give way by absorption or to cause sepsis than catgut.

CASE OF INDUCED ABORTION FOR RELIEF OF NAUSEA AND VOMITING.

DR. THOMPSON, of Richmond, related the case. It occurred in a woman who had previous to her marriage sustained an injury of the leg, which continued to give her trouble, reduced her vitality, and he thought was one factor, in addition to the uncontrollable nausea and vomiting for which abortion was finally brought on, in the causation of death.

The Association elected DR. J. McFADDEN GASTON President; DR. C. KOLLOCK First Vice-President; DR. GEORGE BEN. JOHNSTON Second Vice President; DR. HUNTER McGUIRE member of the Council. The next place of meeting will be at Louisville, the second Tuesday in November, 1892.

TRANSACTIONS OF THE NEW YORK OBSTETRICAL SOCIETY.

ABSTRACT.

Stated Meeting, November 3d, 1891.

The President, CLEMENT CLEVELAND, M.D., in the Chair.

Presentation of Specimens and Instruments.

DOUBLE OVARIAN ABSCESS.

DR. GEORGE M. EDEBOHLS presented a specimen of double ovarian abscess removed seven days before. It was the first time in twenty-nine operations for pus contained in the appendages that he had encountered a double ovarian abscess. It was also of interest from the fact that on neither side was there pus in the tube, although there was some dilatation with mucous secretion. From the history in this case and in the next one, and also from the associated condition of the tubes, the gonorrheal origin of the abscess might be inferred. The gonococcus, however, was not sought for. Convalescence was uneventful.

He referred to a second case of simple pyo-salpinx recently operated upon, which was of interest from the fact that the history of infection was definite. It started from a coitus thirty-six days previously—that is, on the 16th of April. On the 20th there was urethritis, followed rapidly by vaginitis, endometritis, salpingitis, pelvic peritonitis, and there was also pleurisy which was probably of gonorrheal origin. On the thirty-fourth day the diagnosis of pyo-salpinx was made, and the tubes were removed on the thirty-sixth day; one of them contained about two drachms of pus. He was afraid to leave the other one, although it was only slightly thickened. There was a newly formed fibrous coat from acute pelvic peritonitis, but the tubes and ovaries were as easily shelled out as if they were in a normal pelvic cavity.

In the entire twenty-nine cases there was unilateral pyo-salpinx in two, bilateral in twelve, bilateral tubercular peritonitis in three, pyo-salpinx and ovarian abscess on the same side in two, bilateral pyo-salpinx and abscess of one ovary in six, abscess of one ovary in three, etc.

GYNECOLOGICAL TABLE.

DR. EDEBOHLS also exhibited his laparatomy table, which was intended to meet all the operating necessities of the gynecologist. It was constructed with a view to permit of thorough and easy antisepsis and asepsis. It consisted of glass and galvanized iron, two pieces of removable plate glass forming the top. The whole table could be scrubbed with a solution of bichloride of mercury without danger of rusting.

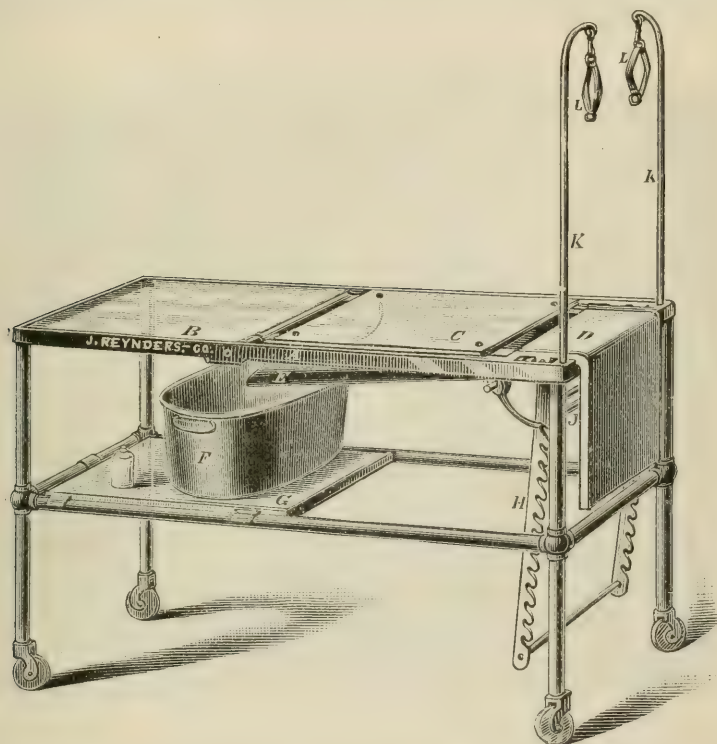


FIG. 1. Edebohls' Operating Table. A, metal frame; B, polished glass plate for head and shoulders; C, ditto for body; D, metal surface; E, trough; K, foot supports; L, ankle straps; H, ratchet for supporting lower end of table when elevated.

There was a space between the glass and the edge of the table, allowing the water to run over on a broad trough beneath and thence into a basin on a glass platform. The table was suitable for operation in the Trendelenburg or other posture, and permitted of the patient being elevated at any angle up to forty-five degrees. Dr. Edebohls operated upon the cervix and perineum only in the dorsal position. With his table there went a foot rest with strap which could be applied around the leg by means of a snap buckle.

DR. J. H. GUNNING said he had witnessed Dr. Edebohls operate on his table, and wished to testify to its solidity and convenience.

DR. FLORIAN KRUG presented a number of specimens selected from cases operated upon by him the last few weeks.

I. MYO-FIBROMATA ; HYSTERECTOMY.

The patient was 36 years of age. The tumors had grown rapidly the last three years. She was unable to earn her living on account of pain and frequent hemorrhages. She had

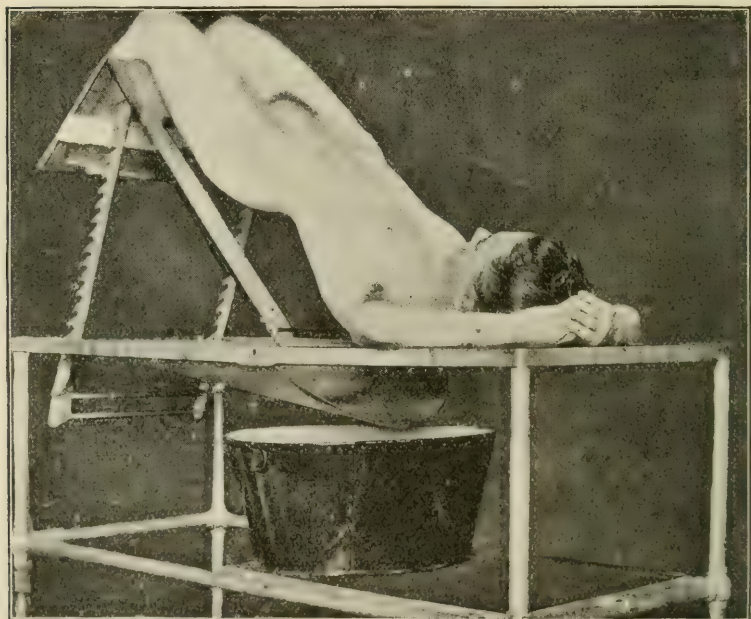


FIG. 2. Edebohls' Table with patient in Trendelenburg's position. Any angle up to 45 degrees may be obtained.

been told that an operation was impracticable. The tumors and uterus extended up to the umbilicus. He removed all, including uterus, tubes, and ovaries, while the patient was in Trendelenburg's posture. Some of the sutures were carried into the vagina for drainage. The vaginal dressing was first changed eight days after the operation. There was practically no elevation of the temperature. Recovery was perfect. He remarked that the anterior wall of the uterus was quite thin, and he thought that if electricity had been employed it would likely have resulted in sloughing and have endangered the bladder.

II. TWO CASES OF CANCER OF THE UTERUS REMOVED BY VAGINAL HYSTERECTOMY.

He had now operated in seventeen cases, and in the last one he for the first time injured an adjacent organ during the operation. As was his rule, he here introduced a catheter into the bladder during the dissection anteriorly; but there was a cystocele, and such close approximation between the two organs that an opening was made into the bladder. The patient, however, made a good recovery and was not aware that the bladder had been injured. He remarked that but



FIG. 3. Edebohls' Table with patient in modified lithotomy position. The buttocks of the patient can be raised to any convenient height.

one of his seventeen cases had died, and it was the only one in which he used pressure forceps instead of ligatures.

III. PRIMARY (?) CARCINOMA OF THE OVARY AND BROAD LIGAMENT.

The mass filled the entire left half of the pelvis, pushing the uterus to the right. He believed the tumor could not have been removed without injuring the ureter to which it was adherent, except by aid of the Trendelenburg posture. The patient made an uninterrupted recovery. Only two or three cases

of primary carcinoma of the ovary had been placed on record. Apparently this was another, for the patient was now in perfect health, without evidence of the disease elsewhere.

IV. MULTILOCLAR COLLOID CYSTS OF BOTH OVARIES, OF THE APPENDIX VERMIFORMIS, AND OF THE OMENTUM.

There were colloid cysts of the ovaries; also of the vermiform appendix, which in its changed state was the size of a hen's egg; also thick studding of the omentum with small colloid cysts. It was the first case on record, he believed, in which the vermiform appendix was the seat of a colloid cyst.

When he operated he found colloid material free in the peritoneal cavity; but as this membrane was not believed to be capable of secreting such fluid, he attributed its presence here to a tapping with a fine trocar by some physician before she came under his care. The patient recovered.

V. HYDRO-SALPINX.

The specimen consisted of a hydro-salpinx in which absolutely no other cause could be ascertained except circulatory trouble. There was prolapsus of the uterus, and besides operating for hydro-salpinx some plastic operations were performed and the uterus suspended.

VI. OVARIAN ABSCESS, PYO-SALPINX, ABSCESS IN THE PERITONEUM.

This case was one of unusually large abscess of the ovary, intraperitoneal abscess, and pyo-salpinx arising from gonorrheic infection contracted from the husband after a second confinement. The abscess of the right ovary contained nearly a quart of pus. It was a very difficult operation. The pelvis was packed after Mikulicz's method.

The next two cases were of pyo-salpinx which had been sent him as cases of retroflexion of the uterus which could not be relieved by pessaries or other treatment. Examination of the specimens showed plainly why relief was impossible from this direction. Since laparotomy the patients had been relieved of their symptoms.

VII. EXTRA-UTERINE PREGNANCY LAPARATOMY; RECOVERY.

The next two specimens were from cases of early extra-uterine pregnancy in which he performed laparotomy with a successful result. The second of the two specimens was from a woman who had been married six weeks, had last menstruated five weeks ago, began to suffer from morning sickness, etc., two weeks ago had been seized with violent pain and

fainting, and since then, until operated upon, had had excruciating pain in the right side and irregular hemorrhage. An indistinct mass was felt on the right side which was taken for tubal pregnancy, and laparotomy revealed rupture into the ovary. Had the case gone longer it probably would have presented the appearance seen in so-called ovarian pregnancy. He believed that ectopic pregnancy was always in the first place tubal.

Another case was reported in which the patient died about thirty-eight hours after the operation, evidently as a result of embolism of the lung, which probably formed on the operating table, for during narcosis the patient had become markedly cyanotic and did not rally from the shock. There was no peritonitis, no hemorrhage into the cavity.

DR. A. H. GOELET presented a small piece of

BONE REMOVED FROM THE RECTUM

of a woman who had complained of supposed uterine trouble giving rise to pelvic and sacral pain and tenesmus at stool.

ELECTRICITY VERSUS LAPARATOMY.

DR. GOELET also related the history of a case cured by electricity. Her symptoms dated back five years, or one year after marriage, and were attributed by her to a strain. She had had no children and no miscarriages. She improved somewhat under the treatment of an assistant surgeon to the Woman's Hospital; but her symptoms again becoming worse, he advised her in 1889 to enter the hospital. The diagnosis there was of retroversion of the uterus and prolapsus of both ovaries. She was treated for three months, when removal of the ovaries was advised as the only way of giving her relief. She left the hospital and fell under Dr. Goelet's care, who found the vagina packed with tampons which held the uterus in place. When they were removed the organ became retroverted and the enlarged ovaries prolapsed. He treated her by bipolar faradization from the fine wire coil, and for a time continued the tampons. At first she was unable to walk more than a block; her marital relations had been suspended for years. Within ten days he could dispense with the tampons. The electrical treatment was continued, and as soon as local irritation disappeared the intra-uterine positive galvanic pole was employed. Soon she was able to walk a mile; after four months began to attend to her household duties and resumed her marital relations without inconvenience. After a year she was practically well; uterus and ovaries in normal position; insensitive to ordinary physical examination; left broad ligament somewhat contracted and interfer-

ing slightly with the mobility of the uterus; some sensitiveness on deep pressure.

DR. J. D. EMMET said this patient had been under his care at first; had shown some improvement; had had a relapse during his absence; then, being unable to come to his office, he advised her to enter the hospital. There he had no further charge of her case, and could not speak of the advice she received to have the appendages removed. This certainly was not indicated while she was under his observation. He judged, however, from the history given by Dr. Goelet, that the use of electricity was fully justified, and he was not surprised at the good result.

DR. HANKS inquired of Dr. Krug how much the period of convalescence was prolonged where the pelvic cavity was packed, as in his fifth case, with iodoform gauze. He had used the gauze packing in the manner indicated in three cases, and it had proven very satisfactory, but the period of convalescence was prolonged, in one instance very considerably.

DR. KRUG replied that while the convalescence was longer, it had not been for months, as some had mentioned. While he hesitated to use drainage ordinarily, yet where the adhesions had been extensive or septic matter had entered the cavity he thought it was absolutely necessary, and he now made use altogether of the Mikulicz method. To rely upon flushing the abdominal cavity with a large quantity of water was a great mistake; it would not remove the pathogenic germs. He also said, in reply to an interrogatory, that he had not had a case of iodoform poisoning from the use of the gauze, and expressed the opinion that some of the cases reported as of this nature were probably cases of severe septic poisoning.

Replying to a question by Dr. Lusk regarding the ultimate results of his hysterectomies for cancer of the uterus, he said he had reported fifteen cases at a section of the Academy of Medicine some months ago: in one there was immediate death from the operation; in one, encephaloid sarcoma of the uterus. Death took place after the fifth month from metastatic process. The rest were well, showing no sign of recurrence, some having been operated upon more than two years ago.

THE PRESIDENT remarked that he had had several cases in which packing the cavity with iodoform gauze seemed to have been the means of saving life. Very recently he had encountered a multilocular malignant ovarian cyst with several small colloid cysts involving the colon, and in which he accidentally punctured a cyst, which made it necessary to go on and complete the operation. He packed the cavity with gauze,

removed it on the eighth day, and the patient had done well. He had used as much as twenty yards of iodoform gauze two inches and a half wide.

DR. WILLIAM T. LUSK read the paper of the evening,

THE TREATMENT OF EXTRA-UTERINE PREGNANCY.

In the first part he referred to the question of diagnosis, which he said in some cases was simple enough. Among the symptoms he mentioned characteristic pain radiating from the site of the tumor. The tumor itself could be distinguished from other tubal enlargements by its peculiar soft feel. Sometimes the changes in the uterus corresponded to those seen in early uterine pregnancy, but often there was perceptible enlargement of neither body nor cervix. Menstrual derangement was often present. It was possible that a diagnosis might be made, in many instances, early in the history of the case, if it were possible to subject the patient to frequent examinations. In his own cases he had observed lateral flexion of the gravid uterus, the fundus one side, the cervix crowded to the opposite side, created a condition liable to be confounded with tubal pregnancy.

Passing to the treatment of extra-uterine fetation, he said the indications in the early months varied with the condition. If rupture had occurred, pains should be taken to ascertain, if possible, whether the resulting hemorrhage had occurred between the folds of the broad ligament; or, if intraperitoneal, whether the blood was free or whether restricted by old adhesions. Circumscribed blood collections following rupture of the tube did not, as a rule, endanger life. If the hemorrhage took place into the abdominal cavity, laparotomy was demanded, although it was not denied that even in some of these cases the effused blood might become circumscribed by adhesive inflammatory process. Few of these patients, however, would recover from the expectant treatment, while opening the abdomen, removing blood clots and the ruptured tube, had been the means of rescuing many from impending death. The operation, as a rule, was not difficult. It involved the separation of adhesions, tying of the pedicle, removing the ruptured sac and clots. In the intraligamentous form it might be necessary to ligate in sections, after first tying the broad ligament at the two extremities of the sac. Before closing the abdomen one should arrest all hemorrhage, not only from the stump but also from separated adhesions.

If the diagnosis were made before rupture had occurred, a choice should be made between destroying the life of the embryo by electricity and removing it by laparotomy. The decision would be determined largely by the experience of the

operator and surroundings of the patient. Where the operator was experienced in abdominal surgery, had plenty of trained assistants and favorable surroundings, he was likely to prefer laparotomy, not only to relieve the patient of present danger but of future trouble. All men, however, were not expert operators, trained assistants were not always at hand, there was often no imminent danger to life, and under those conditions the indications were to arrest the growth of the ovum by other means; of these the best is electricity. It had been suggested that morphine be injected into the sac, and cases so treated had been reported from time to time—he believed eleven in all, with three deaths. But the three deaths were hardly attributable to the method employed. He could say there had been no evil results arising from the use of electricity. In Dr. Janvrin's case rupture had undoubtedly taken place before the current was used; in another, death followed the use of morphine injections after electricity had been discontinued; in another, electro-puncture, now discountenanced, had been employed. Electricity was available only during the first three months, and no one advocated electro-puncture.

In the second half of pregnancy it was now regarded as proper to attempt to remove the fetus and investing membranes as soon as the diagnosis could be made. If complete extirpation of the sac is impracticable, then remove as much of it as possible. The old method of stitching the sac to the abdominal wall and leaving the placenta to come away, when performed during the life of the child, gave as an almost uniform result death from hemorrhage. Experience like this led to the custom of waiting for the death of the fetus, but this exposed the mother to other dangers. It was beginning to be more clearly recognized that the treatment of the condition was subject to the ordinary rules of abdominal surgery. The conditions in the way of a successful removal of the fetal sac were the excessive vascularity of the parts and extensive adhesions, but these difficulties had in late cases not been found insuperable. In the case of an intraligamentous sac Breisky had stitched it to the abdominal wall, taken out the fetus, removed the stitches, and, after ligating the broad ligament on the side next the uterus, separated the tumor, at the same time tying any large bleeding vessels. The author also referred to the manner in which Schauta had recently treated a case of intraligamentous fetation which he thought promised important results in the future. After death of the fetus, provided the sac contents had not become infected, the same principles of treatment held good as in the case of a living child. If pus had formed, the old method of stitching to the

abdominal incision before opening the sac was best, the placenta being allowed to separate spontaneously.

DR. H. T. HANKS opened the discussion on the paper, and expressed agreement with the author regarding a choice between treatment by electricity and by laparotomy. He thought that before the end of the third month the general practitioner was justified in using electricity to destroy the ovum, while the abdominal surgeon was justified in doing laparotomy to remove it. He was also of the opinion that those who had had a fair amount of experience in obstetrics could make the diagnosis of extra-uterine pregnancy with considerable certainty, unless it were in very stout women. He was also convinced that recovery might take place after rupture in the intraligamentous form, and he recalled such a case which he had seen in consultation last fall, and in which it was difficult to decide whether laparotomy should be performed or not. It was not, and the patient had done well. He had now seen four cases of recovery after the ovum had been killed by electricity.

DR. WILLIAM M. POLK thought the expert in abdominal surgery ought not to trust to electricity, but should open the abdomen and by so doing remove the possibility of future trouble. On the other hand, persons not used to abdominal work should resort to electricity, for the reason that the woman's life would be safer from such treatment in their unskilled hands. When the third month had been passed, the rules should be followed which had been stated in the paper. The dangers to be avoided were hemorrhage and sepsis.

DR. BACHE McE. EMMET thought it more difficult to differentiate between extra-uterine pregnancy and other pelvic conditions than it seemed Dr. Lusk did. For instance, he had not found pain in extra-uterine pregnancy characteristic, nor was the density or elasticity of the tumor different from what might be seen in other conditions.

He would condemn more strongly than had any of the other speakers the tendency to too ready resort to the knife in abdominal work. Of the large number of cases on record in which the treatment of extra-uterine pregnancy had been by electricity, in only four had death taken place, and in them some other cause was evident. He knew of no series of laparotomies, faithfully reported, in which the results had been equally good. He did not approve of an operation without a positive indication, for even in the hands of the expert it was more dangerous before the third month than was electricity.

DR. CHARLES JEWETT inquired as to the mortality from treatment by laparotomy before rupture of the sac had occurred. He also believed that the treatment by injection of

opiates should be condemned, notwithstanding the fact that it was supported by so high an authority as Winckel. Regarding the diagnosis, he thought it was by no means easy even in the later months.

DR. MALCOLM McLEAN wished to put himself on record as being still in favor of the use of electricity, at least in advance of a resort to laparotomy. He thought he could speak impartially on the subject, for he had tried both electricity and laparotomy. He was then treating his fourth case by the former method, it being in a patient who had been advised by abdominal surgeons to submit to an operation.

He thought diminution in the size of the tumor in abdominal pregnancy after full term, pointing to absorption of the amniotic fluid, was a valuable indication in treatment. He recalled the fact that a case had been operated upon in Charleston two weeks after completion of the ninth month, hemorrhage from the placenta costing the patient her life while upon the operating table. Ten days after that he had operated upon a similar case, except that it had gone to the thirteenth month, and the last month there had been rapid absorption of the amnion, showing that the placenta had ceased to live as a vascular organ and was not likely to cause trouble by hemorrhage. In this case he went through the placenta, which lay in the median line, yet there was scarcely any loss of blood.

DR. A. H. GOELET thought that the knife should not be resorted to, even by the expert laparatomist, unless there were some positive indication; that, in simple cases, up to the third month electricity alone was justifiable. He thought further experiments were desirable to determine the comparative value of the faradic and galvanic currents in killing the fetus. Martin, of Chicago, had been unable to kill the chick in incubating eggs by the faradic current, while the galvanic current never failed. He related a case seen by him last winter in which the fetus within the uterus died at the third month from hemorrhage, yet it remained afterward in the cavity for four months without doing any harm, and when finally expelled it had shrivelled to almost nothing. So, when the ovum was destroyed in the abdominal cavity or tube by electricity, he thought it would not decay, but become absorbed and prove harmless.

DR. GEORGE M. EDEBOHLS had treated four cases of ectopic gestation. In the first case the diagnosis was made about the second month; the faradic current was used, the tumor gradually disappeared, and the woman had no further trouble. In the second case exploratory puncture was resorted to in order to determine the nature of the contents of the tube. About two drachms of liquor amnii tinged with blood were

withdrawn, and the fetus subsequently died and disappeared. Nothing was injected. In the third case the electric current was also used, but afterward he became convinced that rupture had previously occurred, and that the fetus was already dead and hemorrhage had ceased; so the electric treatment was superfluous. In the fourth case the patient was seen by him at the end of the ninth week, and rupture was supposed to have already occurred. He here demonstrated the existence of blood in the free peritoneal cavity in this manner: He made exploratory puncture of the enlarged tube, but got nothing; yet when the needle was passing out and reached the free peritoneal cavity the barrel of the syringe suddenly filled with blood, showing that rupture had taken place into the peritoneal cavity. He would not have operated, but the attending physician wished to be relieved of anxiety for the patient's future, and insisted that laparotomy be done. He opened the abdomen two days after the puncture and confirmed the diagnosis. The patient recovered, but probably would have recovered just as well without the operation. He did not believe that laparotomy was necessary before the end of the third month, although the conditions might arise which would make it necessary.

DR. A. H. BUCKMASTER thought many women having ectopic gestation died without treatment. He had seen five laparotomies in which ectopic pregnancy was proven to exist, although previous to the operation it had not been suspected. He thought that in using the exploratory needle Dr. Edebohls subjected his patient to greater danger than what would attend laparotomy.

THE PRESIDENT, being asked his opinion on the treatment, said it had been demonstrated beyond the possibility of doubt that electricity would kill the fetus, and he thought this agent should be made use of in preference to laparotomy before the end of the third month.

EDITORIAL.

WITH the present number my connection with this JOURNAL ceases. I have had this step in contemplation for some time, my reasons being the pressure of other duties and cares, and a desire to withdraw from journalistic labors.

Since I took charge of the editorial management of this JOURNAL, eighteen years ago, energy, application, and perseverance on the part of all connected with it have given it its

present high position. During this time I have watched over and guarded its progress with all the interest and care in my power. This child of my adoption was for many years my foremost thought, and my best efforts have been applied to foster its growth and insure its success. Herein I have been supported with unstinted liberality by its publishers. At one time I could not have realized that my name would ever disappear from its title page. It was a part of me, so it seemed to me, and I thought I could not bear to be separated from it. But years have wrought their changes, and now I leave the JOURNAL where its stability is so well assured that nothing can affect it, so long as its chief object is kept in mind, that of giving to the profession a clear, honest, scientific report of the current events pertaining to obstetrics and gynecology.

I have to thank the medical profession, not only of America but also of foreign countries, for the kind and generous support given me during my editorial career. And I trust the same may be transferred to my successor, Dr. Brooks H. Wells, who has ably assisted me for several years, and has substantially conducted the JOURNAL for some time.

In leaving the JOURNAL I feel as though I had to part from an old friend and companion. I shall miss its monthly appearance under my name, and I shall, although with less regret, miss the routine of proof-reading and the manifold details of accepting and refusing communications.

But I feel that I leave the JOURNAL in good hands, and that it will remain the leading periodical in this country and abroad on the subjects to which it is devoted.

To all my friends and well-wishers, to all who have aided the JOURNAL by their contributions and support, I bid a cordial farewell.

PAUL F. MUNDÉ.

REVIEWS.

CHILDBED NURSING. By CHARLES JEWETT, A.M., M.D., Professor of Obstetrics and Diseases of Children at the Long Island College Hospital. Pp. 40. New York: E. R. Pelton.

This diminutive volume, originally prepared for the use of

the nurses in the Training School of the Long Island College Hospital, is a nugget of practical information, so arranged in condensed paragraphs as to make a marked first impression, thus aiding the memory to retain the most important points. Under the head of "Pregnancy," "Labor," and the "Puerperal Period" clear and detailed directions are given of the nurse's duty, and are followed by the model of a chart for daily record. The after-care of the patient, the prevention of childbed fever, and the care of the infant next receive attention, while several pages are devoted to the subject of artificial feeding. A chapter on the management of the birth in the absence of the physician, and a glossary of the terms used in the little book, complete this unpretending but excellent work.

PAINFUL MENSTRUATION. The Harveian Lectures for 1890. By FRANCIS HENRY CHAMPNEYS, M.A., M.D. Oxon., F.R.C.P., Physician Accoucheur and Lecturer on Obstetric Medicine at St. Bartholomew's Hospital; Consulting Physician to the General Lying-in Hospital; Examiner in Obstetric Medicine, Member of the Board of the Faculty of Medicine, in the University of Oxford; Examiner in Obstetric Medicine in the Royal College of Physicians, London. Pp. 88, 8vo. London: H. K. Lewis, 1891.

Dr. Champneys in this little volume fully maintains the reputation of these lectures for scientific accuracy and thoroughness of investigation. It is a very complete résumé of the literature of this important subject, and, while to a large extent theoretical and in certain points open to criticism, is of value because of its unbiassed deductions. Of the three lectures, the first takes up the general considerations; the second, membranous dysmenorrhea; the third, spasmodic dysmenorrhea. The treatment of membranous dysmenorrhea the author regards as "certainly a most unhappy problem." He urges extreme care in the diagnosis of the local conditions, and finds that, in general, the best results have followed repeated dilatation and aseptic curetting. Among drugs useful in various forms of dysmenorrhea he places first tincture of castoreum in thirty-drop doses three or four times daily during the pain. He also favors the old-fashioned hot foot-bath, with a good glass of hot gin and water, at bedtime at the beginning of the pain. The gin should be given once a month only.

Being convinced that spasmodic dysmenorrhea is a neurosis, he vigorously protests against too frequent mechanical treatment, though, in the absence of parturition, as a last resort, and where there are no inflammatory contra indications, he employs dilatation, preferably by means of Hegar's bougies, under anesthesia and with careful asepsis.

LA PRATIQUE DES ACCOUCHEMENTS: A L'USAGE DES SAGES FEMMES.—THE PRACTICE OF OBSTETRICS: FOR THE USE OF MIDWIVES. By P. BUDIN, Fellow of the Faculté de Médecine, Obstetrician to La Charité, Member of the Paris Academy of Medicine; and E. CROUZAT, Clinical Professor of Obstetrics at the Faculté de Médecine of Toulouse. Pp. 719, 116 illustrations. Paris: Octave Doin, 1891.

The status of midwives in France is clearly defined and limited by law. Aspirants to the position, after giving satisfactory evidence of good moral character, are obliged to pass an entrance examination in reading, writing, and arithmetic, and must then study obstetrics theoretically and practically in schools and hospitals for a time varying from ten months to two years, according to the laws of the various local faculties of medicine. After graduation they are obliged to register their names before being allowed to practise. They may deliver all normal cases, but are not allowed to use instruments in delivering without calling in a physician; neither can they prescribe medicine, with the exception of the ergot of rye, and antiseptics for external use. Should the case be a complicated one and either mother or child succumb, and should the midwife have failed to summon a physician in time, she is liable to imprisonment on a charge of homicide due to unskilful attendance, imprudence, carelessness, and negligence.

The book under discussion is the outcome of a course of lectures delivered by its authors to the midwives of Paris. The chapters on anatomy, physiology, embryology, pregnancy, and labor are such as may be found in any work on obstetrics for the use of students and practitioners, and are characterized by great clearness of description. The presentations are given in detail, as are the phenomena of labor. Of especial excellence is the section describing the first stage, the illustrations accompanying it giving a better idea of the dilatation of the cervix than any which we have previously seen.

Abnormal presentations and the diseases of pregnancy are described with some detail, in order that midwives may learn to recognize the conditions in time to summon a physician. Some ideas of artificial delivery of the placenta, tamponade of the vagina, and version are given, to be resorted to by the midwife only in case of urgent necessity.

The after-care of both mother and infant is set forth at length, with illustrations of syringes, clinical thermometer, breast pumps, and bottles for artificial feeding. There is an excellent chapter upon the necessity for strict asepsis.

It would be a pity to give midwives the monopoly of so instructive, practical, and well written a book as the one in question.

A. R.

ABSTRACTS.

1. HEDRICH (Breslau): A CASE OF DIVERTICULUM RECTI SPURIUM (*Centralblatt für Gynäkologie*, No. 21, 1891).—H. relates a case of this affection and claims to be unable to find another similar case cited in medical literature. The history is briefly as follows: Mrs. S., æt. 28, married seven years, no children, one abortion (third month) in first year of married life. From that time on menstruation profuse until two years ago; since then menses very scanty. Two years ago she had peritonitis. Disease lasted about four months. This was followed by a leucorrhea. Has also been troubled whenever she had a movement—sometimes diarrhea, often a burning and tenesmus. The masses she passed were often covered with pus and blood, and there was considerable mucus. Also complains of a frequent desire to urinate and a burning sensation when doing so. An examination of the patient showed that the cervix lies anteriorly, is of a conical shape, fundus is in state of retroflexion. The uterus is immovable and embedded in perimetrial adhesions. The posterior vaginal wall is pushed forward by a tumor which is soft and about the size of a goose egg; it fluctuates, and pressure does not diminish its size. On conjoint manipulation (vagina and rectum) it can be distinctly felt between the fingers; its upper limit cannot be felt. A diagnosis of cyst of the posterior vaginal wall was made. In examining per rectum H. was enabled to feel a ring-shaped stricture near the promontory. The cyst was incised and 15 to 20 c.c. of grayish mucus were evacuated. An attempt was made to find a communication between the cyst and the rectum, but it was impossible to do so; but in drawing the cyst walls apart, fluid that had been injected per rectum passed off through the opening in a stream about the size of a lead pencil, so that the connection between the cyst and the rectum could no longer be doubted. The result of the operation was very satisfactory. The case must be summarized as follows: The patient was infected when first married, and a stricture of the rectum developed, then the rectum ulcerated above the seat of stricture, and from this point a perirectal infiltration took place between rectum and vagina. An abscess formed which spread down toward the vulva, and thus the cyst was formed. L. S. R.

2. H. FEHLING (Basle): THERAPY OF PUERPERAL FEVER, WITH SPECIAL REFERENCE TO GENERAL SEPSIS (*Zeitschrift*

f. Therapie).—In treating cases of puerperal fever we have to treat the general septic condition, for in the majority of cases the local affection can only be treated symptomatically. At present, in spite of the various attempts with benzoate of soda and other drugs, we are unable to reach the septic poison directly and thus destroy it. It is useless to make local applications to the vagina, cervix, and uterus, for the poison has passed into the general circulation. F. merely dusts these ulcerations with iodoform or salicylated starch (1:5). In the beginning of a puerperal sepsis, where we may hope that the affection is still circumscribed, he employs vaginal injections of a two-per-cent solution of carbolic acid, or a 1 to 4,000 solution of bichloride, but where there are symptoms of albuminuria it is advisable not to employ the bichloride. A one-per-cent solution of creolin also acts well. These injections are very useful when the affection has only attacked the mucous membrane and where there is a putrid discharge; but where a peritonitis or a parametritis has occurred they should not be employed, or, if at all, very sparingly. If after these injections there is no diminution in the temperature or pulse, or where the fever from the beginning is markedly septic, then it is advisable, after carefully cleaning the vagina, to give an intra-uterine injection. In some cases, where this is not done with the greatest care, or where there are small erosions on the cervix, this may be followed by a chill. If after the injection the temperature and pulse are lowered, then it is unnecessary to give another injection. If this does not occur, a second injection is, as a rule, useless, in fact may do harm, especially when there are symptoms of peritonitis or of pelveo peritonitis. Since we have no specific against this septic process, it becomes our duty to make our patient capable of resisting the action of the micrococci. The fever affects the appetite and digestion, interferes with oxidation, and causes albuminuria. This, according to the observations of Binz and others, can be overcome by the administration of large doses of alcohol. The alcohol also tends to diminish the temperature and increases the heart's action. All heavy wines are to be recommended, *e.g.*, Port, Sherry, Madeira, Tokay, heavy Rhine and Moselle wines, Greek wines, Bordeaux and Burgundies; besides these, cognac, rum, arrack, etc. These can be mixed with water or milk, with black tea or coffee. Runge recommends the following:

R	Spiritus Vini (Cognac).....	60
	Vitelli Ovi unius et dimidii.	6
	Syrupi simplicis.....	40
	Aquæ destillatæ.....q. s. ad pond.	200

M. S. Dose a tablespoonful.

To these alcoholic beverages may be added aqua menthæ piperitæ, tinctura amara, liquor ammoniæ anisatus, syrupus corticis aurantii, etc. These beverages are to be given every half-hour, and it is wonderful to observe the quantity that the patients can bear. It is also advisable to administer plenty of milk. Meat had better be omitted. In some cases the patients lie in a stupor and it is impossible to administer large quantities of alcohol. Here it is advisable to give warm baths, as recommended by Runge, Billroth, and Winckel. The baths are contra-indicated in cases of peritonitis and in severe cases of metrophlebitis. They are to be given at the temperature of 24° R., reducing them to 22° R.; lasting five or ten minutes; not more than one to two baths a day. Usually three or four baths suffice. Antipyretics are harmful and useless. In endometritis we may employ a cathartic, but this is not advisable in cases of peritonitis or parametritis. When a diarrhea is present it is not advisable to check it, as it often carries off the septic material. We can stimulate the action of the kidneys by employing Selters or other waters, benzoic acid, etc. By these means we are often enabled to carry our patient through a severe attack of septic fever, especially with the aid of an experienced nurse. L. S. R.

3. MARITAN: A CONTRIBUTION TO THE STUDY OF ELECTRICITY AS A PREPARATORY TREATMENT TO OPERATION (*Electrothérapie*, March, 1891).—The author gives a short sketch of the introduction of electricity into the therapeutics of gynecology, and states that since 1884 he has made over a thousand intra-uterine applications, both faradic and galvanic. During the course of his practice he came to the conclusion that this treatment was not only of value for relief of the pain caused by fibroids, but that it possessed analgesic powers in all chronic affections of the genital organs. He was, moreover, impressed with the fact that in gynecological surgery the saying "*sublata causa, tollitur effectus*" does not always hold good. After hysterectomy, salpingotomy, ovariectomy, and even curetting, the patient recovers from the operation, but pain often persists.

As a result of the consideration of these two facts, Maritan decided to try the effect of electrical treatment preparatory to operation, with a view to diminishing the after-pains, using it only in cases of severe pain, or as an invigorating measure when there was great weakness. He reports five cases in which the pain was extreme, chosen from among his numerous observations, as illustrative of the sedative action of electricity.

I. *Cyst of the right ovary; laparotomy*.—May 1st, 1889. Abdominal fluid tumor, twice as large as the head of an adult;

has already been twice punctured. Uterus retroverted; leucorrhea profuse. Pains in head and stomach; sciatica of the right side, aggravated by walking.

Treatment.—Intra-uterine bipolar faradization. Relief experienced after the third application; after the eighth, patient would believe herself cured but for the presence of the tumor.

Operation May 19th. Pedicle found twisted six times. Patient discharged cured June 12th. Seen again in September, 1890; was perfectly well.

II. *Retroversion; laceration of cervix; ectropium of mucous membrane; glandular endometritis; Alexander-Alquié's operation; Schröder's amputation of the cervix; curetting.*—Patient seen November 20th, 1889. Violent cephalalgia. Iliac pain and sensitive abdomen. Obstinate constipation. Profound mental depression.

Treatment.—Fourteen applications of bipolar faradism. After the second, insomnia disappeared, appetite and general condition were progressively improved, mental condition entirely changed.

Operation January 4th. Discharged cured January 30th, having had no return of pain. Returned October 15th in excellent condition.

III. *Prolapsus uteri; rectocele; lacerated perineum; amputation of cervix; curetting; posterior colporrhaphy; perineorrhaphy.*—Patient seen March 17th, 1890. Pains in the groins and stomach. Cannot stand or walk without pain and exhaustion.

Treatment.—Eight intra-uterine applications of bipolar faradic current. General condition much improved, walking and standing endured better than before, pain has entirely disappeared.

Operation April 24th. Cicatrization complete by May 15th. Patient gets up and has slight pain in groin. Three more applications of electricity cause cessation of pain. Patient discharged May 22d, cured. Returns November 3d, 1890; recovery perfect.

IV. *Fibroid of the Uterus.*—Patient seen November 12th, 1889. Pain and metrorrhagia, anemia, constipation, vomiting. Tumor fills up the right side of abdomen as far as the floating ribs. Condition so serious that hysterectomy is decided upon. Preparatory treatment given in the form of the galvanic current. After six applications condition improved. Food retained and less blood lost. After the sixteenth treatment pains disappear, menstruation is normal, and patient refuses to submit to operation. Treatment continued for four months, after which patient is discharged; is free from pain, digestion is excellent, sleeps well, and walks without diffi-

culty. Tumor has slightly decreased in size. Patient keeps in good condition by coming to take an occasional treatment.

V. *Fibroid of Uterus*.—Patient seen May 10th, 1889. General condition poor. Metrorrhagia; no appetite; defecation difficult. Uterus as large as a fetal head, irregularly spherical, and hard. Galvanic current applied three times a week for two months; appetite improved and general condition somewhat better. Electricity applied once a week for four months and then patient discharged. Returns May, 1890; has hemorrhage, enlarged abdomen, painful pharyngeal reflex. A tumor is found in the uterine cavity projecting into the cervix, but patient refuses operation.

In the first three cases the applications of electricity lasted from six to eight minutes, their strength depending upon the sensitiveness of the patient. In the last two the positive pole was introduced and the current was applied for five minutes, and varied in intensity from fifty to one hundred and twenty milliamperes.

In Case IV. electricity, to be sure, caused an indefinite postponement of operative measures, but produced a decided improvement in the patient's condition.

In Case V. pathological symptoms were decreased and rendered bearable, and the fibroid was so modified as to facilitate its removal by the vagina, when the patient consents, which will be a less formidable operation than abdominal hysterectomy, indicated before the electrical treatment.

Maritan does not attempt to reach any definite conclusions, but presents these cases as of interest to gynecologists. He emphasizes the fact that electricity should be considered as an adjunct and not a rival to surgery, for which it can prepare the way by facilitating the operation itself and putting the patient in good general condition. Where an operation is impossible, electricity is the only thing that can render life tolerable to the sufferer.

A. R.

4. FREUDENBERG (Frankfurt-a-M.): MYOMA AND THE CLIMACTERIO (*Der Frauenarzt*, 1891, Hft. 6).—Plüger was the first to demonstrate in a scientific manner that ovulation is the cause of the irritation which produces a periodical hemorrhage from the mucous membrane of the uterus. It would therefore appear rational to believe that castration would be indicated in cases of myoma which, on account of their size, situation, etc., lead to severe hemorrhages and endanger life. This method of treatment has not, however, proved entirely satisfactory. The operation is certainly not entirely free from danger, and furthermore we observe some cases in which the hemorrhage does not cease after castration. The uterus does not always shrink immediately after the ope-

ration. The myoma still acts as an irritant, and so the atypical bleeding continues. Dr. Schaffer effected a permanent cessation of the menses and the bringing on of the climacteric by making a local application to the uterine mucosa of Dumontpallier's pencils of chloride of zinc. This effect is explained by the fact that the mucosa is destroyed, the function of the uterus is interrupted, it shrinks; this then affecting the ovaries secondarily, the climacteric results.

F. made an observation in reference to the production of the climacteric which he considers to be the first of its kind. It was a case of myoma with severe hemorrhage. Massage was employed and the climacteric was brought on. This he explains as follows: By employing massage regularly and for a long time the uterus contracts and remains in this condition, its function thus becomes interfered with, it shrinks, and this in turn affects the ovaries. He believes that massage would seem to be a proper method to employ in bringing on the climacteric and thus to cure the patient.

L. S. R.

5. VUILLET (Geneva): DILATATION OF THE UTERUS (*Der Frauenarzt*, 1891, Hft. 6).—Both the author and Landau believe that it is not a proper surgical procedure to operate upon the interior of the uterus without having carefully explored it, and this can only be done by dilating it, and thus we are enabled to make a digital examination of the interior. The method which the writer adopted at first was to introduce a number of small iodoformized cotton tampons. Landau's method is much simpler and quicker, and by this method we can examine the interior of the uterus at the end of twenty-four hours. Landau's method is as follows:

Instruments.—1. One pair of bullet forceps, which are fastened into the anterior lip of the cervix. 2. A uterine rod (Landau) about twenty-five centimetres long, and having a smooth, polished, round upper end. It is somewhat stronger and larger than a sound, perfectly straight, and not flexible. 3. A glass dish containing antiseptic gauze in strips which are sixty to seventy centimetres long and two to three centimetres wide. Each strip is folded into a package.

Introduction of the iodoform gauze.—Patient on her back. Introduction of a Sims speculum. Drawing down the uterus by means of the forceps which has been hooked into the anterior lip of the cervix. An assistant hands the gauze, which is placed upon the rod and pushed up to the fundus. The rod is then withdrawn one to two centimetres, and pushes up more gauze, and so on until the entire strip has been introduced, with the end protruding through the cervical canal. Dilatation of the uterus is useful in cases of endometritis, cases where there are pieces of decidua and placenta remaining, polypus, etc.,

and particularly in cases where we wish to recognize and remove small submucous and even interstitial fibro-myomata.

L. S. R.

6. SLECHTA, J. (Prague): RUPTURE OF THE UTERUS (*Der Frauenarzt*, 1891, Hft. 6 and 7).—The writer claims that two factors must be considered in the care of these cases: firstly, In what manner is the child to be extracted? and, secondly, How shall we treat the rupture of the uterus?

As regards the first question, most authors agree that if the child has passed through the ruptured uterus then a laparotomy must be performed. The same holds good when only a part of the child has passed through the rupture, but the rest is high up in the pelvis or to one side of it, so that it cannot be reached per vaginam except with great difficulty. If, however, the presenting part of the child has not slipped out of the pelvis, then it is delivered in the natural way. If it is a breech, then the extraction is easy. If the head is low down, forceps may be applied; if not, then perforate and extract with the cranioclast. In transverse presentations embryotomy is the safest plan. If an arm has come down, then it is best to decapitate. Version is not permissible, for by this means the tear is enlarged, if small; if subperitoneal, it becomes perforating, the hemorrhage is increased, the placenta is loosened, and intestines or omentum are liable to descend through the tear. Of course version is easily performed. The placenta should never be expressed by pressure applied from without. It should be extracted manually at the time the child is delivered, or immediately thereafter. If the placenta has passed through the tear and cannot be found, then laparotomy is indicated.

As to the second question, obstetricians differ in regard to the method of treatment. When laparotomy is indicated on account of the child having passed through the tear, the tear is either sewed up, or else the uterus is removed *in toto* and the abdomen drained either through the abdominal wound or through the cul-de-sac of Douglas.

If the labor has taken place *per vias naturales*, many authors believe in performing a laparotomy in cases of complete rupture. Others, however, prefer to treat these cases by means of tampon and drainage through the vagina. The results show better statistics by the latter than by the former method. Piskacek reports eighty cases of complete rupture. Mortality in laparotomy cases 60.8 per cent, those tamponed 56 1 per cent. In cases of incomplete rupture all authors prefer to tampon, although some believe in laparotomy because they claim that otherwise we cannot always control the hemorrhage. S. reports eight cases of uterine rupture occurring

in the clinic at Prague. Of these, three were perforating ruptures; all died, two after laparotomy, one after being tamponed. Five were incomplete ruptures, and all of these cases recovered, tamponing being employed.

The seat of the rupture was varied in these cases: Anterior wall, two; both tamponed; cured. Anterior wall, left side, two; both died; one laparotomy, one tampon. Posterior wall, one; died; laparotomy. In the left canthus, two; cured; both tamponed. Left-sided transverse tear, one; cured; tamponed.

It is generally admitted that the prognosis is more grave when the tear takes place upon the anterior wall, because the secretion cannot find proper vent for escape.

Author's method of treating these cases is briefly as follows: First determine the exact seat of rupture, then disinfect the tear and the interior of the uterus with thymol or boric acid. The uterus is pushed down through the abdominal wall until the edges are approximated as closely as possible. It must then be held in this position for several hours until the hemorrhage ceases. The fingers are then passed up to the upper border of the tear and strips of gauze placed upon and around the wound. Then the cervical canal and vagina are packed with gauze. If there is a hemorrhage a drainage tube is to be introduced between the folds of gauze. It protrudes from the vagina, and irrigation may be carried on through it. After this an ice bag is placed over the uterus. This may remain there for four to five days, or even longer. During the first three days opium is administered and urine withdrawn with catheter. The gauze is removed on the ninth or tenth day, for by this time there is no longer any danger of hemorrhage.

L. S. R.

7. PETIT, PAUL: INTRAVAGINAL AMPUTATION OF THE CERVIX ACCORDING TO SCHRÖDER'S PROCESS (*Nouv. Arch. d'Obst. et de Gyn.*).—The author defines Schröder's process as consisting of the excision of a wedge-shaped portion of the cervical mucous membrane and subjacent stroma, followed immediately by plastic repair of the organ.

The indications for the operation he gives as follows:

1. Chronic cervical endometritis, accompanied by deep laceration, with eversion of the whole thickness of the lips; erosion or *pseudo-ulceration*, which he considers to be dependent upon the eversion, and fibrous degeneration of the lesions of the mucous membranes.

2. Cancer limited to the cervix.

3. Hypertrophy of the cervix, conical cervix, stenosis, ante-flexion.

The operation may result in a species of artificial involu-

tion of the uterus, but Petit thinks that the exceptions to this result are numerous. On the other hand, it has a rapidly beneficial effect upon the nodules formed by parametritis in the vicinity of the cervix.

As to its effect upon conception and pregnancy, since the operation leads to primary union without atresia, its influence is beneficial. Pregnancy follows its usual course, and the stage of dilatation during labor is perfectly normal.

The effect upon the nervous system depends greatly upon the kind of nervous phenomena exhibited by the patient. In cases of hypochondria, insanity imagining persecution, etc., there should be no local treatment, not even curetting; but where there is simply hysteria or neurasthenia, the removal of cicatricial indurations or follicular cysts may not at once cure the neurosis, but will certainly lead to a gradual cure by destroying a centre for reflex nervous phenomena, imparting confidence and hopefulness to the patient, and restoring to her social and sexual activity.

The contra-indications for the operation are pregnancy (unless there be epithelioma or threatened abortion due to cicatricial tissue) and acute perimetritis.

The author enters into the technical details of the operation, which he claims has not been thoroughly done in any of the text books.

The preliminary measures consist in a strict antisepsis of the vagina, and the usual care given to patients before operation. A list is given of the instruments required. Four assistants are needed.

The patient is placed in the dorsal position, and the usual careful cleansing of the external and internal genitals is attended to and the uterus curetted. Simon's speculum is pressed down upon the perineum, and forceps draw down the anterior lip. Unless the vagina is exceptionally narrow, it will not be necessary to use retractors: the assistants may with their fingers open out the sides and base of the labia minora.

The cervix is now incised bilaterally as high as may be necessary, and the posterior lip incised transversely through the internal mucous membrane and a certain amount of the subjacent stroma. A semicircular incision is now made parallel to the contour of the lip, going from one end of the transverse incision to the other, and several millimetres deep. Forceps make traction upon the inferior lip of the wound, the anterior lip is held by dissecting forceps, and the blade of the knife is reinserted in the wound and carried with small strokes through the tissues to the transverse incision. The wedge-shaped piece is easily removed, and a large freshened surface is left, at the upper end of which is a right-angled

"elbow." The latter is drawn forward by forceps, and needles threaded with silk are inserted about a quarter of an inch above this spur, traverse beneath the raw surface, and emerge far enough below so that when the two raw surfaces are approximated the spur or elbow will be entirely covered. Three stitches are usually sufficient, and they are now drawn together and tied.

The anterior lip is next resected, following the line already traced. The cervix is well drawn down into sight, and the freshened surfaces approximated and sutured from above downward on both sides. The cervical and vaginal mucous membranes must meet, and there must be no projections of raw surface between the stitches. A small piece of iodoform gauze may be introduced as far as the internal os, so as to prevent atresia.

The after-care consists in irrigation with a bichloride solution, careful drying with absorbent cotton, and the packing of iodoform gauze about the cervix and in the vagina. Unless there is oozing, this dressing need not be renewed before the fifth day. Three or four such dressings usually suffice, and are followed by two daily irrigations with a bichloride solution 1 to 3,000. The patient may get up on the twelfth day.

A. R.

8. ROKITANSKY (Vienna): THE USE OF ELECTRICITY IN DISEASES OF THE FEMALE GENERATIVE ORGANS (*Wiener klin. Wochenschrift*, 1890, Nos. 47 and 48).—The author reports results of cases treated during two and a half years. There were twenty-two fibromata of the uterus, one peri- and parametric exudation, and eighteen cases of the various forms of chronic endometritis. The total number of sittings amounted to about six hundred and fifty. The greatest number that any one patient was subjected to was sixty-three. Duration of the sittings varied between five and ten minutes (in two cases twelve minutes). The intensity of the current seldom exceeded one hundred to one hundred and ten (once three hundred) milliampères. He believes that we must consider this plan of treatment valuable, but that even when used correctly and with care it has its dangers, is painful, slow, and does not always produce the desired results, and is often only a palliative measure.

L. S. R.

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